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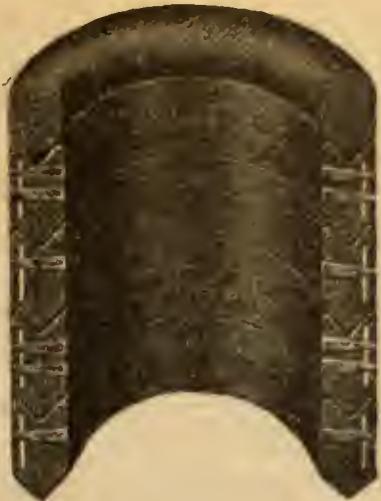
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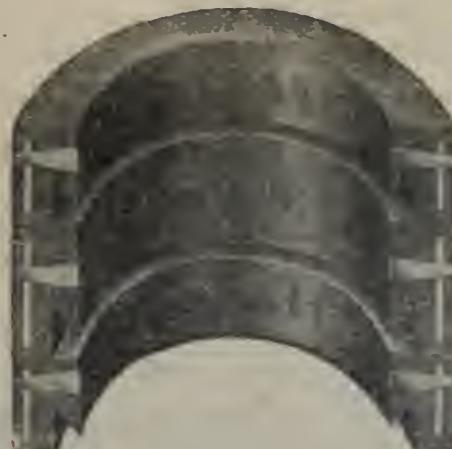


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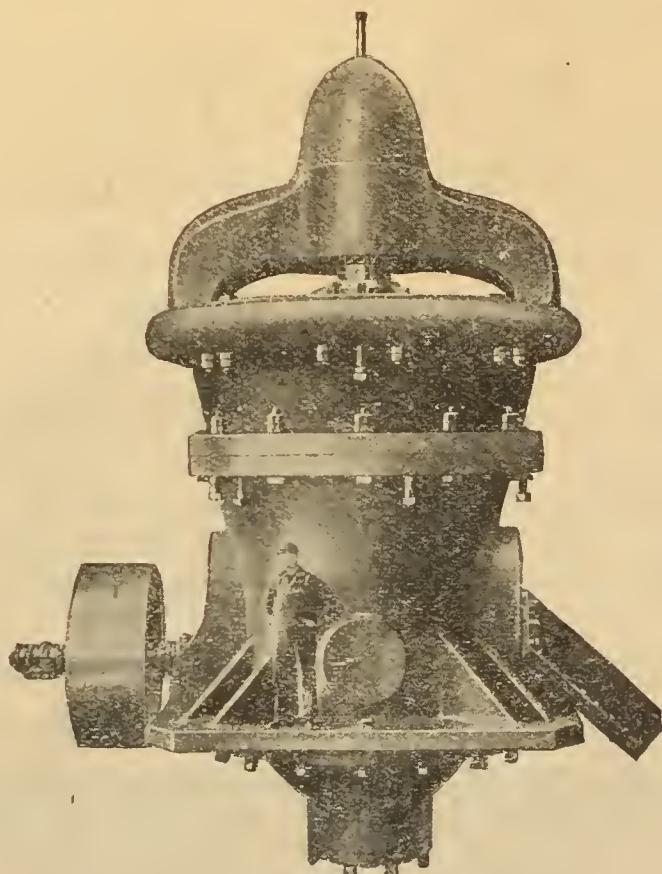
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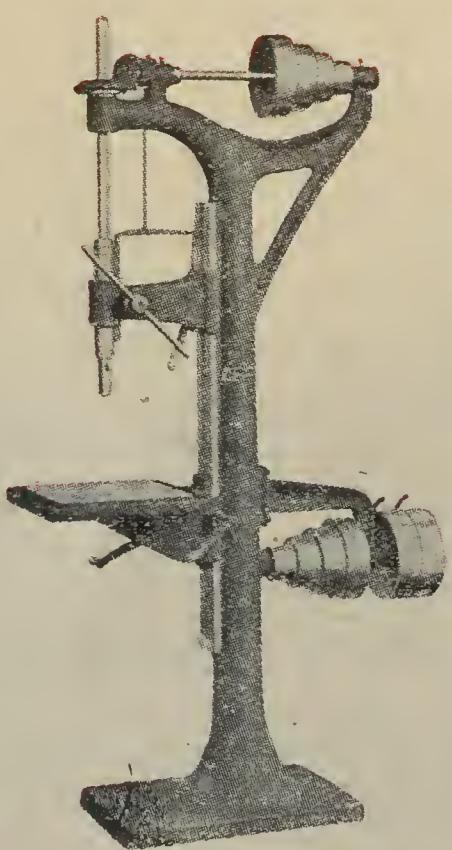
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Notes and News.

Naturally the question of the low-grade mines, raised largely at the quarterly meeting of the Chamber of Mines this week, and we deal in our leading columns with the position disclosed by the President. Speeches of unusual interest were also delivered by members of the Chamber, notably by Mr. Christopherson in supporting and emphasizing what the President had said. Mr. Dale Lace also made a speech, in his best fighting style, and roundly rated the Government on its treatment of the coal industry and its policy in regard to the Far East Rand mining leases. A full report of the very interesting discussion appears in another part of this issue.

* * * * *

All roads led this week to the great War Market in aid of the Governor-General's Fund, and the **The Mines and the War Market.** mines have excelled themselves in enthusiastic participation. Where all have done such wonders, it would be invidious for us to apportion praise in a brief mention, but a word of special congratulation must be extended to the Honorary Controller, Mr. E. G. Izod, who with Mr. J. G. Torrance, Mr. R. Currie, and the indefatigable heads of sections, have achieved such marvellous results. From the indications at the time of going to press, the returns to the Governor-General's Fund will, no doubt, be commensurate with efforts put forth.

* * * * *

The December dividend announcements are now due, and some have already been made. Thus, a **The December Dividends.** Reuter cable from London this week states that the annual report of the Van Ryn G.M. Estates shows a net profit of £204,062, and an amount of £25,963 has been carried forward. It also states that the increased working costs necessitated the reduction of the present interim dividend to 2s. 6d. per share, or at the rate of 12½ per cent., against 17½ per cent. for the corresponding period of 1916. The directors of the City and Suburban G.M. Co. have declared a dividend of 3s. per share, tax free, which compares with 5s. per share paid for each of the two preceding half-years. Other reductions are naturally expected.

* * * * *

The Princess Reconstruction Scheme. The details of the proposed reconstruction scheme of the Princess Estate will doubtless be generally welcomed by the shareholders. To take advantage of the increased proportion of payable Main Reef and of the improved value of the South Reef in the lower levels of the mine, a considerable outlay will be necessary on the Central Deep shaft, and the finances of the company are to be reconstructed to meet the cost, and reorganise the mine. The circular printed in this issue sets out the proposals of the directors very clearly, and it is satisfactory to note that pending the completion of the reconstruction, Messrs. Goerz & Co., Ltd., will advance the funds necessary for the work. Another welcome feature of the proposals is the provision for shareholders in the United Kingdom to participate. On the whole, the parent company is to be congratulated on the preparation of a scheme that goes as near as is humanly possible to pleasing everybody.

* * * * *

The Hume reinforced concrete pipe, brought so prominently before the public in connection with the **The Hume Pipe Co. of S.A., Ltd.** Steenbras water scheme for Capetown, has resulted in the formation of a company styled The Hume Pipe Company of South Africa, Ltd. A number of plants are on order, and the first complete plant is expected to arrive within a couple of weeks. With this the company will start operations in Capetown, a factory site having been secured at Maitland. Other plants as they arrive will be laid down at Johannesburg and other centres. There are to be seven factories in South Africa.

De Beers' war contribution to date, as revealed in their annual report, is a noteworthy one. The

De Beers' War Work. expenditure on war account from August, 1914, to June 30, 1917, comprised the following amounts:

Half-pay to employees on active service, £205,994 9s. 10d.; donations to the Governor-General's Fund, £20,000; donation to Red Cross Societies (British Red Cross £25,000 and French Red Cross £25,000), £50,000; donation to Kimberley Mayor's Fund, £10,000; gratuities to employees, £21,923 18s. 11d.; on other objects, £8,771 12s. 2d.; total £326,690 0s. 11d. The casualties among employees on active service from the commencement of the war to October 19, 1917, were as follows: Killed or died of wounds or disease, 62; wounded, prisoners of war and missing, 120; total, 182. In addition 10 more employees have been killed or died on active service since the report was drawn up. The directors, heads of departments and other officials represented by sons and other relatives in the war make a lengthy list.

* * * *

Though the present price of tin appears to be abnormally high as compared with pre-war quotations,

The Price of Tin. the advance relatively is not so great as it might seem considering the course taken

by other base metals. The general view taken by the tin trade is that consumption after the war is likely to be maintained at a high level. This market has been considerably firmer in tone, and with the premium on Straits tin and the "back" or three months' standard considerably decreased, there has been large influential buying, which has given rise to much conjecture. It would, however, be wise to bear in mind (write Messrs. Rudolf Wolff & Co.) that, owing to the rather uncertain state of affairs between ourselves and the Dutch Government, there might possibly be some hitch in the dispatch of Banca tin from the East. The demand for English tin has now very much curtailed. In consequence thereof, there has also been much more interest in Chinese tin. Consumers have been constantly in the market, as is generally the case when prices are rising. It is impossible to make any guess of how the statistics will come out at the end of the year, owing to the fact that the shipments from the East will have to be estimated.

* * * *

The unusual presence of a grateful and articulate shareholder marked the proceedings at the

A Rooiberg Shareholder's Appreciation. recent Rooiberg annual meeting. The shareholder in question, Mr. Tarlton,

said he desired to congratulate the directors and technical advisers of the company on the acquisition of the farm "Blaauwbank." He understood that the farm was one of considerable promise. The agreement, under which the farm had been acquired, he considered a model in its way, for, whilst giving to the owner of the farm a fair equivalent for his property if such property turned out to be valuable, it also minimised the risk of those who were putting up the money to prove its value. He felt sure everyone present would realise the difficulties with which the technical advisers of the company had had to contend in such abnormal times as those through which we were now passing. It was his opinion, however, that these difficulties would result in benefit to the company, as they had laid upon the technical staff the necessity of carefully and systematically investigating the question of extraction, and he thought that they might claim that these investigations had yielded good results.

* * * *

Mr. Edward Eyre Hunt, in an article in the *World's Work*, on "Hoover of the C. R. B.," says the

The Glory of the Mining Engineer. the sub-head "The Glory of the Mining Engineer":—

"There must be something about the mining engineering profession which encourages these traits. I confess I do not know how to define it, but there seems to be an unusual *esprit de corps* and a high level of professional honour and sensibility which marks mining engineers out from the mass of men. It cannot be an

accident that Herbert Hoover and practically all of his more important assistants in Belgian relief work have come from this group. It can hardly be an accident, either, that the Rocky Mountain Club, a club of New York mining engineers, gave up £100,000—all that they had been saving for a new club house—and handed it over post-haste to Hoover to be spent for Belgium; or that still another group of mining engineers have formed a corporation called "Belgian Kiddies, Ltd.," for the purpose of aiding the children of Belgium. For these men seem to be creating among themselves a new type of citizen. There are few dictators in their ranks. They seem to like co-operation."

* * * *

The first meeting of the present session of the Institution of Mining and Metallurgy was held on the

The I. of M.M. Roll of Honour. 15th November. With the October Bulletin is issued a full list of the members of the Institution at present on naval or military service with H.M. Forces. They total over 600 in number. The Roll of Honour, including those killed in action, died of wounds, etc., already comprises a further 78 names. Members are requested to send to the secretary, 1, Finsbury Circus, E.C.2, any corrections for, or additions to, the lists. Members serving with the United States or other Allied naval or military forces are also requested to send particulars of rank, etc., for inclusion in supplementary lists to be published in succeeding issues of the Bulletin. Members who have been invalidated out of the Forces are requested to send full particulars of their service for inclusion in the records of the Institution.

* * * *

Mr. C. G. Patterson, chief engineer for the Butters Filter Company, who came to this country

Mr. C. C. Patterson. about eight years ago to introduce the Butters vacuum filter plant, left on the evening of the 6th inst. for London en route for Chili, South America, where he is to look after the Butters Company's interests in the nitrate field there. Mr. Patterson has done good work for the gold mines of this country during the eight years, the filter plant being a complete success everywhere it has been installed, every new mine being equipped with a Butters filter, and many of the old ones, with extensions added at various times, and we hope similar good results may crown his labours in the new fields he is about to tackle in Chili. Mr. A. Hay Davidson, who has been closely associated with Mr. Patterson during the past six years, takes up the position of South African manager for the Butters Company.

* * * *

The dividend of this Bank for the first half of 1917 is unchanged at the rate of 14 per cent., less income tax. Accompanying the dividend

The Standard Bank. announcement is a balance sheet made up to June 30 last, which shows a considerable expansion in business during the past year, and particularly during the first half of the current year. Deposits, including the undivided profit balance, amounted on June 30 last to £29,596,591, against £26,243,681 a year before and £21,560,485 just before the war. Further expansion has occurred in the note circulation, which, according to the latest figures, amounted to £1,759,421. Cash, etc., in hand at the end of June last amounted to £6,735,281, while investments were valued at £3,755,717. Bills discounted and advances show appreciable expansion, having amounted in the middle of this year to £25,264,511, against under £20,000,000 both six and twelve months before. Included in these figures are bills of exchange, which during the past year have risen by about £1,647,000. Comparison of some of the items in the balance sheet is made below:—

	June 30, 1917.	Dec. 31, 1916.	June 30, 1916.	June 30, 1914.
Notes in circulation	£1,759,421	£1,559,012	£1,269,797	£1,069,233
Deposits, etc., including profit balance	29,596,591	25,629,282	26,243,681	21,560,485
Cash, etc.	6,735,281	7,033,329	7,148,253	7,332,047
Investments	3,755,717	3,679,692	3,961,042	2,643,335
Bills discounted and ad- vances, etc.	25,264,511	20,802,007	20,584,465	16,703,295

After having been held up for various reasons, progress is being made at the Rhodesia Broken Hill mine. The two blast furnaces suggested by **Rhodesia Broken Hill.** Messrs. Hooper, Speak & Co. have at last been put into commission. No. 1

started on June 25, and is running well. It was decided not to blow in No. 2 until the men and natives had attained something like efficiency; the start was made on the 18th October. In July No. 1 furnace produced 412 tons of lead, in August 478 tons, and in September 520 tons. It is announced that Mr. Edmund Davis has joined the board, and that the directors have made financial arrangements to exercise the option for the purchase of the shares in the Rhodesian Land and Zinc Syndicate. If the second furnace works as well as the first the estimated capacity is largely exceeded, and this may have influenced the directors. The mine and plant were leased for five years as from April 1, 1916, on certain terms. The lease was to be cancelled upon the syndicate repaying its debentures of £60,000 and all interest thereon and £30,000. The Development Co., however, had an option to acquire the total share capital of the syndicate at any time.

* * * *

The feature of special interest at the annual meeting of the Crescents (Matabele) Mines and **Crescents (Matabele) Mines & Land Co.** Land Company in mail week was the reference of the chairman (Mr.

Herbert B. Vaile) to the new policy, which is now being considered by the board, of starting cattle ranching on a moderate scale and thus anticipating a measure which is almost certain to pass into law at the conclusion of the war, requiring companies owning large blocks of land in Rhodesia to develop them in some shape or form, or be penalised for not doing so. Having regard to the fact that at least two of the Crescents Co.'s areas, known as the Ghoko and Bubi blocks, are eminently suited for ranching purposes, such a step as is now proposed would seem to be highly desirable, and if carried out under experienced management, should in time be very profitable. In recent years quite a number of ranches have been started in Rhodesia, with results which, on the whole, must be regarded as satisfactory, and there is little doubt that the industry will show considerable expansion in the not distant future. It is stated that 10,000 head of cattle have been exported to Johannesburg from Matabeleland alone during the past twelve months, and the prices obtained are said to have been very remunerative.

* * * *

One of the most attractive fields for investigation opened by the exigencies of the war relates to the winning of tin and tungsten. Recently **Tin and Tungsten.** some successful experiments have been made with a view to increasing the

recovery of tin, but no systematic researches have been undertaken beyond those designed to improve appliances now in use, and the Privy Council Committee for Scientific and Industrial Research has expressed the hope that a Research Association might be established in order that the investigations already undertaken might be continued on a larger scale. One of the difficulties hitherto has been the want of adequate funds. But the Ministry of Munitions, represented by the Department for the Development of Mineral Resources, is now suggesting that those interested in the tin and tungsten mines of Cornwall and Devon should co-operate in the establishment of a Research Association and contribute to a central fund devoted to a study of the problem. In this way adequate means might be provided annually for two or three years, and with such a fund, supplemented if necessary by a grant from the Committee of the Privy Council, experimental researches could be conducted under the continuous supervision of first-class professional men, and on a basis of cost which individual operators do not feel themselves able to bear. The proposal should appeal to mining companies and royalty owners from a strictly business standpoint. Under present methods over 35 per cent. of tin and a higher percentage of wolfram in the ore is lost. An improvement of even 10 per cent. in the recovery would have a very important bearing on the fortunes of the mines now being worked, and would offer a considerable incentive for the resuscitation of many properties that have been closed down.

TOPICS OF THE WEEK.

THE CHAMBER AND THE LOW-GRADE MINES.

As we anticipated last week, the quarterly meeting of the Chamber of Mines on Monday called forth very important pronouncements on the subject of the low-grade mines. The President of the Chamber, Mr. A. E. Wallers, very clearly and emphatically reviewed the position, and he was supported by Mr. D. Christopherson in a speech packed with practical detail. The proceedings at the meeting were of such unusual importance that we print a full report in another part of this issue. It may be noted at the outset that Mr. Wallers stated he had already placed the position of the low-grade mines before the Government with all possible emphasis, and the facts set forth by him and by Mr. Christopherson on Monday may, therefore, be regarded as for the enlightenment of the public. It is shown that the whole position is dominated by the continued shortage of native labour and the further reduction in the supply of explosives, owing to glycerine shortage. In his opening remarks Mr. Wallers very clearly explained these difficulties. He said: "I laid some emphasis at the quarterly meeting of the Chamber held in September last on the grave situation in which a section of the industry was placed as a result of the combined burden of an acute native labour shortage, together with the ever and very heavily increasing operating costs—to-day I fear the gravity of the situation is accentuated. As regards the native labour position, I then expressed the opinion that there were some very slight signs of improvement. I am sorry to say that that opinion has not been confirmed by results, as the wastage has been very heavy. . . . Experience has shown the rashness of any prophecy in regard to native labour, even by the greatest experts on the subject, but I feel bound to say that I see no prospect of any considerable rapid and permanent improvement in the supply available for the mines from present sources." Mr. Wallers explained that the causes that have led to the restricted native labour position consisted of the re-opening of diamond mines, increased operations of the coal mines, the recruitment of natives for work in connection with the war, the expansion of local industries and the insistent and growing demands of the farming community for labour. Added to this were the increased demands as a result of the opening up of the Far East Rand. Turning to the matter of explosives, the President said: "The next feature of great difficulty which is upon us is our position respecting the explosives necessary for the continuance of our operations. The Imperial Government have decided to reduce the quantity of glycerine set aside for the requirements of the Union, and consequently the Union Government has advised that a 20 per cent. reduction in the glycerine available for the manufacture of explosives for the mines will take place as from the beginning of next year. As you are aware, very considerable economy in the consumption of nitro-glycerine has been achieved by the mines since the commencement of the war, and has resulted in a reduction in the consumption of glycerine from nearly 500 tons per month to approximately 350 tons per month. I do not think it is possible, therefore, to meet the further reduction that is required from any additional economies and consumption if the present scale of operations is to be maintained. . . . These extracts suffice to prove that Mr. Wallers did not mince words in describing the difficulties now before the industry. Mr. Christopherson, who has made the matter of the low-grade mines his particular study, showed the significance to the Government and to the Reef Municipalities of the possible closing down of a portion of the mines. He made several practical suggestions which will doubtless, as Mr. Wallers promised, be considered by the Executive of the Chamber of Mines; and he dwelt hopefully on the excellent prospects of the industry, after the war, in the event of an all-round effort to avert the present set-back to it proving successful. There does not seem to be anything we can add to these warnings from the responsible leaders of the industry. If, despite all efforts, some of the low-grade mines have to close down, at any rate neither the Government nor the people can claim that they have not been amply warned of the impending danger.

THE ELECTRIFICATION OF THE SOUTH AFRICAN RAILWAYS.

By F. W. MILLS, Chief Electrical Engineer, S.A.R.*

THE paper read by Mr. Kirkland, and now under discussion, is certainly one of great interest to the public of South Africa, and describing, as it does, one of the largest of main line electrifications that have taken place up to the present time, it is of special interest to the members of this Institute. When Mr. Kirkland left here for his native country some months ago he told me that he was going to interest himself in Railway electrification, no doubt having a shrewd eye upon future developments here. He certainly did not waste any time, and the film he secured, illustrating the Chicago Milwaukee Railway and the various manufacturing processes necessary for the electrification, was a masterpiece and intensely interesting. As Mr. Kirkland says: "The electrification of railways is no longer under any doubt from an engineering point of view, it is entirely now a matter of finance." The development on purely privately-owned properties seem to indicate that it is a paying proposition, as naturally no companies make changes unless it pays them to do so and enhances the value of their shares. That being well proved by the returns from various undertakings, there seems to be no reason why we in South Africa should not use electricity to solve some of our very severe problems in transportation. We on the South African Railways have many difficult problems to encounter. We have a single line, heavy and continuous gradients, sharp curves, and in some divisions we have almost, if not quite, arrived at the capacity of the line from a steam loco point of view. The electric locomotives can give us increased loads and greater speeds, which naturally increases the capacity of the line. The Administration has, therefore, examined the question of electrification very carefully, and has decided to avail itself of the services of an eminent firm of consulting engineers, as was stated by Sir William Hoy after the exhibition of the film by Mr. Kirkland. The gentleman representing Messrs. Merz & Maclellan is now in Johannesburg and is about to start his preliminary investigations. In connection with this Chicago electrification the most interesting point is to us that it is essentially a "goods" proposition. Until recent years the justification for electrification was either troubles under special conditions, such as the smoke nuisance in tunnels forming the approach to large cities or else the congestion due to suburban passenger traffic. For main line goods service it was accepted that the steam loco held its own. It came quite as a surprise that a main line 440 miles long had been electrified. In the Union we have a few places where the steam lines seem to be at their full capacity. From a purely passenger traffic point of view I fear we have no conditions which may justify electrification, but from a goods point of view I believe and hope that the use of electricity may be justified. On the Komatipoort line we have a ruling gradient of 1 in 50, and we move a down traffic of some 5,000 tons daily. This, by the way, is to be increased almost at once. On the Natal line we have at present some 1 in 30 uncompensated grades, which are actually 1 in 23.85. These heavy grades are being done away with, and when the sanctioned work is completed, the ruling grade on this section will be 1 in 65 only. At present we move an average of 13,000 tons to Durban daily. On the Witbank division we move some 19,000 tons in one direction daily, but the grade here is never more severe than 1 per cent. Over the Hex River Pass we move an average of 6,500 tons per day south, and the ruling grade is 1 in 40. I can only assure you that my Administration is keenly alive to this subject, and is doing its best to obtain the best advice on the many transportation problems which it realises can only be solved electrically. We have, as everyone knows, a single line in nearly every instance. Our gradients, and the weight of the steam locos, fix the amount of traffic we can haul at any given spot. For instance, a through goods train from Ladysmith to Durban can at present not take more than 650 tons. If we can increase this load by using electric

locomotives to, say, 1,000 tons and double the speed, as can easily be done, naturally the capacity of the line is much increased, and this puts off the evil day when the line has to be duplicated. Mr. Kirkland's paper is not one that can be criticised from a technical point of view, but I think that we are all indebted to him for bringing this subject up at this time. It has come at a very opportune time for the people of this country as, after all, the white population and taxpayers are few, and it is of intense interest to everyone to see that we get the best possible results out of the railways without adding to our capital expenditure unnecessarily. We have considered in the past quite a few sections as regards electrification. In 1903 a scheme was practically adopted for the Randfontein-Springs line. This was for purely passenger work and, I fear, was somewhat ahead of its time, as I do not think we had then sufficient passengers to move about to justify electrification unless it included goods services also. Later on, in 1904 or 1905, the Waterval Boven to Komatipoort section was reported upon by Messrs. Harper and Company. The report was very favourable, but nothing further was done. We have investigated the section Witbank to Germiston, which is one of our busiest lines, but the grades are not very severe there, being nothing greater than 1 per cent. The Natal line, between Ladysmith and Durban, is the section which seems to me to be the best for electrification. The question of water power is of course being looked into; but I am afraid we have not much of that available. Coal, anyhow, is as cheap as anywhere in the world, and I confidently believe that this section will justify the expense of electrification. If electrification is adopted we are in a fine position as, although we displace steam locos still, the system is so large and new steam locos are continually needed, and the displaced plant can be at once used elsewhere. If electrification takes place all the displaced steam locos are really a credit to any electrification scheme. In this way we are really in a better position than most Railway Administrations, as, in many cases, plant would have to be scrapped by them. We are so extensive that whatever we displace can be put to use in other sections. The exhibition Mr. Kirkland gave at the Empire, to which he invited all the senior railway officers, was a great success. Most of them came to the exhibition with quite a hazy view of what electrification meant, but they left with far clearer ideas than could have been obtained by them from literature on the subject. This is very important, I think, as the question of electrification is now being seriously discussed, and it will, I believe, be the means of securing a far more sympathetic treatment and interest than would have been the case if the exhibition had not taken place. It has been an educational service to many of our people, who will naturally have a lot to say on this subject of electrification.

New Heriot.

The result of the New Heriot's operations for the month of November was as follows:—Ore milled, 12,500 tons; gold recovered, 4,665 ozs.; profit, £3,879. The decrease in returns is due to the grade being lower owing to increased reclamation work and reduced number of stope faces available, and also the labour supply being inadequate.

MINING EXAMINATIONS.

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* Read before the S.A.I. of E.E.

DUST PREVENTION IN MINES.—II.*

[By ARTHUR C. WHITTOE and J. H. VEASEY.]

The dust-laying tests were conducted in a main air-way in which the air was travelling at about 260 feet per minute. The air was tested for dust (a) just before it reached the water-blast, and (b) one hundred feet beyond the blast; thus a period of about 23 seconds was given for allaying the dust. Two Waugh drills—drilling up-holes dry, under a special permit from the Government Mining Engineer—were used to create the dust and were set up 65 feet to windward of the dust-sampling tube. The visible particles of dust had all settled before the first sampling tube was reached, there being no dust observable by the naked eye at that point during the whole of the tests, though quantities of impalpable dust settled during the test on the outside of the sampling sump, etc. The tests were conducted by Mr. A. J. R. Atkin, of the Miners' Phthisis Prevention Committee. The following extracts from Mr. Atkin's report shows the result of the tests:—

"The spray was turned on and allowed to run for two minutes before the drills commenced working, so that no dry dust was allowed to get into the test length of the tunnel.

"The tubes were held horizontally 4 feet from the floor. Under these conditions falling particles should not have exerted any possible disturbing influence.

"The water used for these was the water used throughout the mine for sprays and atomisers. Its dust contents are shown below:—Dust under 5 mikrons† in mgms per litre, 2; dust between 50 and 50 mikrons in mgms per litre, 2; total dust under 50 mikrons in mgms per litre, 4; percentage weight of particles under 5 mikrons, 50 per cent.

"The first experiment was made with the $\frac{1}{8}$ -inch nozzle. This produced fairly large drops, perhaps 200 mikrons in diameter, and at the test distance of 30 feet from the nozzle suspended 2.96 grams of water per cubic metre of air; the two tests made agreeing as shown:—(1) 3.02; (2) 2.90; average 2.96 grams of suspended water per cubic metre of air.

"The effect of the quantity of water consisting of particles of the size produced by the $\frac{1}{8}$ -inch nozzle is shown by the following results in dust:—

TABLE I.

	Sample No.	Dust under 5 mikrons in diameter.	Dust between 5 and 50 mikrons in diameter.	Total Dust under 50 mikrons.	Per cent. Particles under 5 mikrons.
Before ..	2,847	7.0	18.0	25.0	28
After ..	2,848	0.9	1.2	2.1	43
Before ..	2,849	12.0	26.0	38.0	31
After ..	2,850	Trace.	0.6	0.6	Nil.
The average of these results is shown:—					
Before ..	..	9.50	22.00	31.50	30.15
After ..	..	0.45	0.90	1.35	33.5
Percentage allayed ..		95.26	95.90	95.71	—

"From this it will be seen that with this nozzle 95.26 per cent. of the very fine dust was allayed, and that the effect was practically proportional to the sizes of the particles, for there was only an increase of 3.15 per cent. on the quantity of dust (very fine) after the dust cloud had passed the spray. It is to be noted that this spray is very wetting at 100 feet distant.

"The second experiment was made with a 1/32-inch nozzle, which produced particles of water decidedly smaller than the $\frac{1}{8}$ -inch nozzle, and also some particles so small as to be classed as fog. There was no fog apparent with the larger nozzle. Although there was a considerable quantity of water apparent in the air, the spray was not nearly so wetting as with the $\frac{1}{8}$ -inch nozzle.

"The third experiment was made with a 1/64-inch nozzle, which produced a very thick fog. At the test distance of 30 feet it was not possible to see an acetylene lamp flame, and at 98 feet from the jet the fog was very thick after the jet had been running for 30 minutes. The mist thoroughly saturated the atmosphere and had not evaporated 40 minutes after the jet was stopped. It did not appear to be very wetting, although there was a large quantity of moisture suspended in the air.

"The amount of moisture suspended by this 1/64-inch nozzle at a distance of 30 feet from the jet is shown below:—(1) 4.82; (2) 4.70; average 4.76 grams of suspended water per cubic metre of air.

"The amount of water suspended by this 1/32-inch nozzle is shown by the following result of this test:—(1) 4.50; (2) 4.26; average 4.38 grams of suspended water per cubic metre of air. The effect, in dust, by the water-cloud produced by this nozzle is shown in Table II.

TABLE II.

Sample No.	Dust under 5 mikrons in diameter.	Dust between 5 and 50 mikrons in diameter.	Total Dust under 50 mikrons.	Per cent. Particles under 5 mikrons.
Before ..	2,851	15.0	34.5	49.5
After ..	2,852	2.4	1.2	3.6
Before ..	2,853	9.0	55.0	64.0
After ..	2,854	3.0	5.0	8.0
The average of these results is shown:—				
Before ..	..	12.0	44.75	56.75
After ..	..	2.7	3.1	5.8
Percentage of dust allayed.		77.5	93.07	89.77

"It will be seen that although 77.5 per cent. of the very fine dust is allayed, yet the increase in percentage of fine dust in the total unallayed dust is 25.4 per cent., showing that a spray giving drops of this size has a tendency to leave a larger percentage of the very fine dust suspended in the air, although allaying the dust efficiently.

TABLE III.

Sample No.	Dust under 5 mikrons in diameter.	Dust between 5 and 50 mikrons in diameter.	Total Dust under 50 mikrons.	Per cent. Particles under 5 mikrons.
Before ..	2,855	24.0	86.0	110.0
After ..	2,856	8.0	17.5	25.5
Before ..	2,857	19.0	56.0	75.0
After ..	2,858	11.5	14.0	25.5
The average of these results is shown:—				
Before ..	..	21.5	71.0	92.5
After ..	..	9.75	15.75	25.5
Percentage of dust allayed.		54.0	77.8	72.4

"The effect on the dust produced by this fog of finely divided water is shown in Table III. It is here clearly shown that although this very fine spray suspends a greater amount of water in the air than the others, it is not efficient in allaying the very fine dust. 54.0 per cent. of the very fine dust is allayed, and the usual tendency for the percentage of very fine dust unallayed to increase is shown again by the rise of from 23.2 per cent. before the spray to 38.2 per cent. after the spray. From these results it will be seen that the nozzle with the $\frac{1}{8}$ -inch orifice is the most efficient dust allayer for very fine dust, and a comparison can be made from Table IV.

TABLE IV.

Size of Spray.	Grams. of moisture suspended per cu. metre of air.	Percentage of very fine dust allayed.
$\frac{1}{8}$ in.	2.96	95.26
$\frac{1}{32}$ in.	4.38	77.5
$\frac{1}{64}$ in.	4.76	54.0

"The 1/64-inch nozzle produces an extremely thick fog, but it is evident that the particles are too small to settle readily, so

*Paper read before the South African Institute of Engineers.

† 1 mikron = 1/25,000th of an inch.

do not allay the very fine dust well. With it established that the $\frac{1}{2}$ -inch nozzle will allay 95.26 per cent. of the dust under 5 mikrons in 23 seconds, the apparatus shows itself to be of very considerable value."

The authors do not claim that these tests are absolutely final, i.e., the series was not extensive enough to establish the exact, or perfect, sized atom of water which should be attained; but they are deeply grateful to the Phthisis Prevention Committee for sanctioning the tests which are, necessarily, authoritative, and to Mr. Atkin for the painstaking and thorough manner in which he conducted them. It may be that had further tests been conducted at 260 feet from the atomiser the remaining 4.29 per cent. of the total dust (or 4.74 per cent. of very fine) would have disappeared, or, alternatively, if slightly larger jets for both air and water had been used the dust might have all disappeared in the 100 feet. But it was clearly established by the tests that all but 4.29 per cent. of the total dust (or 4.74 per cent. of the very fine) was settled in 23 seconds, therefore such a stream of atomised water playing into a dead end would settle the whole of the dust, no matter how dense it was, in a very few minutes. A distinctive feature of the system of finely atomising water by means of compressed air is that the whole drive is filled with fine particles of water. With

the finest atomising a dense fog is created, which is sufficient to mask the light from a group of acetylene lamps at a distance of 20 or 30 feet. This fog is too finely divided to give the best results, as is seen from the test results. On the other hand, this very dense fog is probably the best means for preparing the dust for final allaying, and the authors think that the combination of two atomisers—one creating a dense fog at a point 50 to 100 feet in advance of the other—would provide the ideal system for allaying dust in a development end. As the whole drive is filled with atomised water, every portion of the hanging and side walls is wetted, even the back of projecting pieces of rock, thus providing the most suitable means of preventing any dry dust accumulating at any part of the working place. The ordinary water-blast wets the projecting face opposite to the blast, but not the backs of projecting pieces, and it is the side away from the blast which needs wetting as the air current, carrying dust, strikes that side. The great proportion of the water used with the ordinary water-blast is worse than useless; the large drop not only rapidly falls to the ground, but it carries numbers of useless small atoms of water with it, and thus removes a proportion of the water which would have done good work.

(To be continued.)

PRINCESS ESTATE: PROPOSED RECONSTRUCTION.

AT the last general meeting of the Princess Estate and Gold Mining Company, the chairman stated there were indications that a greater proportion of the Main Reef in the company's property would prove to be payable than had been previously expected, and that the value of the South Reef developed in the lowest level continued to be satisfactory. Development work done since that date tends to confirm these indications. Taking this into consideration, as well as the condition of the Central Deep shaft, the consulting engineer of the company has recommended to the board expenditure estimated at £26,500, for the purpose of putting this shaft into order, by cutting out the bend, and also improving the hoisting and other equipment. This work will very considerably increase the capacity of the shaft, and will make it possible to handle rock from lower levels than those at present being worked. Simultaneously, therefore, the Central Deep shaft will be sunk to the 15th level, which, together with the provision of the necessary pumping plant, is estimated to cost £14,500. The work is expected to take some nine months and, pending its completion, stoping operations in the neighbourhood of this shaft will not be feasible. Crushing will, therefore, be somewhat restricted during that period, it being improbable that more than 20,000 tons will be milled monthly. In the third quarter of next year, however, it is expected that it will be possible again to supply the full mill. The effect of undertaking this work should be a substantial reduction in costs and, provided development of the Main and South Reefs justifies expectations, a very considerable prolongation of the life of the mine, for the causes which have latterly prevented development at depth will have been removed. With a view to providing the capital necessary to carry out this scheme, the board has concluded a provisional agreement with Messrs. A. Goerz & Co., Ltd., by which the board undertakes to recommend to shareholders a reduction of the capital of the company from £573,033 in £1 shares to £57,503 6s. in 2s. shares, to be effected by writing off 18s. per share, and the subsequent increase of the capital by £50,000 to £107,503 6s. through the creation of 500,000 shares of 2s. each, and Messrs. A. Goerz & Co., Ltd., undertake, immediately after the scheme has received the sanction of shareholders and the reduction of capital has been confirmed by the Court and registered, to subscribe at par and pay in cash for the whole of the 500,000 shares so to be created. Messrs. A.

Goerz & Co., Ltd., further undertake to place at the disposal of the company a sufficient number of such shares to enable it to offer to shareholders resident in South Africa the opportunity of subscribing at the same price for these shares in the proportion of 1 new for 1 old share. Messrs. A. Goerz & Co., Ltd., also undertake, provided the consent of the Imperial Treasury to such procedure is obtained within three months of the date upon which they subscribe for these new shares, to place at the disposal of the company a sufficient number of such shares to enable it to offer the same rights to shareholders resident in the United Kingdom. Legal requirements will cause some three to four months to elapse before this scheme can be carried into effect, and, as it is of the highest importance that the work should be commenced forthwith, Messrs. A. Goerz & Co., Ltd., have undertaken to lend the company the funds required meantime, up to a maximum of £50,000, at 7 per cent. per annum, which amount shall be inclusive of interest and inclusive of the amount, with interest, of the balance of the existing loan. If this scheme receives the approval of shareholders, the company should be free of debt when it is able to restart crushing to the full capacity of its mill (which, as already stated, is expected to be in the third quarter of next year) and profits subsequently earned should, subject to the requirements for shaft sinking, be available for dividends.

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THE YEAR WITH THE WITBANK COLLIERY.

THE report of the directors of the Witbank Colliery, Ltd., for the year ended 31st August, 1917, to be submitted at the seventeenth ordinary general meeting of shareholders, to be held on January 30 at 11 a.m., shows that the working profit for the year amounted to £84,492 10s. 1d. This amount, together with the balance of £89,535 18s. 4d. unappropriated at the commencement of the year, making a total of £174,028 8s. 5d., has been dealt with in the appropriation account as follows:—Expended on capital account: Equipment, £4,653 19s. 10d.; Uitspan equipment, as per balance sheet, 31st August, 1916, £43,421 11s. 6d.; less furniture, etc., £389 19s. 10d.—£43,031 11s. 8d.; total, £47,685 11s. 6d.; less sale of freehold stands: Witbank township, £975; amount previously appropriated for shares and interests in co-operative concerns, etc., now included in liquid assets, £6,090 4s. 1d.—£7,065 4s. 1d.; Government taxes, £11,329 3s. 1d.; dividends Nos. 24 and 25, £52,500; balance unappropriated represented by cash and cash assets, less liabilities, £69,578. The balance is made up as follows:—Shares, etc., £3,691 12s. 1d.; stores and materials, £17,665 3s. 8d.; sundry debtors and payments in advance, etc., £26,920 11s. 10d.—£48,277 7s. 7d.; net cash after allowing for liabilities, £21,301 10s. 4d.; total, £69,578 17s. 11d. The cost of the Uitspan equipment, for which no special provision had been made in previous years, and which appeared in the balance sheet at 31st August, 1916, at £43,421 11s. 6d., has now been taken into the appropriation account. In past years no provision was made in the accounts for the current year's Government tax on profits and income tax, the amounts under these headings appearing in the following year's appropriation account. In this year's accounts it will be seen that this method has been changed, and an allowance of £5,020 4s. has been made for the year ended 31st August, 1917. This amount is shown as income tax, as the Income Tax (Consolidation) Act, 1917, came into operation on the 29th June, 1917, and repealed the Mining Taxation Act, 1910, and subsequent Acts relating to the taxation of mining companies. Owing to the death of Sir Sigmund Neumann, Bart., who was sole partner in the firm of Messrs. S. Neumann & Company, the administration of the mines constituting the Neumann Group passed into the hands of the Central Mining and Investment Corporation, Ltd., as from the 1st July, 1917. On the 15th February, 1917, the directors declared an interim dividend, No. 24, of two shillings and sixpence per share (12½ per cent.) for the half-year, and on the 16th August, 1917, a dividend, No. 25, of two shillings and sixpence per share (12½ per cent.) for the second half-year, making 25 per cent. for the year. You will be asked to confirm the board's action in the matter.

CONSULTING ENGINEER'S REPORT.

Mr. H. Stuart Martin, in his annual report, writes:—Including 126,346 tons of duff, the despatches from your mine during the past year totalled 887,331 tons, which is 36,483 tons more than for the previous year. The number of shifts worked averages only 237·5 for the two pits, and although this is an improvement of 15·6 shifts on the preceding year, it is far below normal with adequate railway truckage. The use of electric coal cutters has been extended, with satisfactory results. The quality and width of the coal seams, as disclosed by development work, continue well up to standard, and both mines are in a sound position.

MANAGER'S REPORT.

The manager, Mr. J. K. Addie, writes:—Output and despatches: Detailed schedules are submitted giving monthly despatches from Witbank and Uitspan mines, the total amounting to 887,331 tons. *Witbank*.—Machinery and plant: Your plant has been thoroughly well maintained. With the exception of an additional boiler, which is in course of erection, it has not been necessary to instal any new machinery. Mine: Particular attention has been paid to development during the past year and good progress has

been made. With the exception of the eastern section, where minor faulting is in evidence, the seam continues to prove of a satisfactory thickness and carries a high calorific value. All haulages are working well and have been advanced to suitable stations. No excess of water has been met with, the present pumping plant having ample capacity to deal with all mine water. Considerable alterations and additions have been made to the air mains below ground; the working pressure on the coal cutters has in consequence materially improved. Buildings: No new buildings have been erected. All your existing quarters, etc., have been kept in a thorough state of repair. *Uitspan*.—Machinery and plant: It has not been necessary to increase the machinery or plant during the period under review. The plant has been well maintained and has run satisfactorily. Mine: Good development progress has been made, particularly to the south and south-west. The seam continues to be most satisfactory. No difficulty has been experienced in maintaining high calorific values. An electric hoist and an additional endless rope haulage have been put in commission. Arrangements have also been made to cut the whole of the mine by means of electric coal cutters. Two air shafts have been sunk to improve ventilating conditions. Buildings: All buildings have been kept in good repair; no additions have been necessary. Compounds: The health of the native employees continues to be satisfactory. Twenty rondavels have been built at Uitspan of a similar type to those at the Witbank location. At both mines this method of housing continues to be popular with the natives. General: A considerable number of your employees are still on active service, both in East Africa and in Europe. I wish to express my appreciation of the work done by your mine staff, who have worked loyally in your interests.

New Kleinfontein.

Stamps, 250; days, 25; tube mills, 8; tons milled, 57,560; gold recovered, 18,208 fine ozs.; net value, £75,563; profit, £15,353; working costs per ton (excluding development), 19s. 2d.; development to working costs, 1s. 9d.; total working costs per ton, £1 0s. 11d.; capital expenditure, £2,126.

The report of the directors of the New Modder for the quarter ending 30th September, 1917, states that development was curtailed and confined to the more important connections required for the increased output

from the mine. No. 2 incline was sunk to the horizon of the 14th level, and crosscutting to the reef is proceeding. Current operations have been hampered by the labour position, the average number of natives employed underground being 414 less than for the June period. Sorting was consequently reduced and the tonnage milled was 6,000 tons less. The profit was only affected to a slight degree, working costs showing a reduction of 10d. per ton milled against a reduction of 5d. per ton in the yield. Good progress can be reported on the new reduction plant. The position as regards the new winder at the time of writing is as follows:—Approximately 40 per cent. of the machinery is on the mine, 20 per cent. on the water, and the remainder has not yet left England, but advices state that work is proceeding steadily and the drums will be shortly completed for shipment. The capital expenditure for the quarter amounted to £77,699, mainly in connection with the new plant. The amount unexpended on authorised votes is £162,973. In the quarter's account no allowance has been made for sums which will accrue to this company under the Bewaarplaats Moneys Application Bill.

His many friends on the Rand will be glad to hear that Major Karri Davies has been successful in opening up a valuable copper proposition in Canada.

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THE WEEK IN THE SHAREMARKET.

Prices Still Falling—Dull and Inactive.

The market continued its downward course on Saturday morning, the only activity being in Lace Props, of which large purchases were made from the usual quarter. Overnight the Modder East section showed weakness, notably in the three-year Options which were brought down to 7s. 3d., at which price they stood again at the call. The whole list, at any rate the active stocks, was marked down. Monday morning brought no improvement, and prices were again all lower and continued weak throughout the day. Modder Easts fell to 20s. 9d., Government Areas to 71s. 3d., and Springs to 67s. 3d. At the opening on Tuesday Springs flattered their backers with sales and buyers at 68s., but at the call sellers prevailed and they lost 6d. Modder Easts made somewhat of a recovery, but New Modders lost another quarter. Lace Props were in better demand at improved rates. The remainder were practically unchanged. There was a better demand for Modder East four-year Options at the opening on Wednesday, the price advancing to 8s. 5d. The three-year Options were not equally favoured, and continue increasing the distance between the four-year. At the call, actual business was limited to less than a dozen stocks. Government Areas and Springs were again lower; Laces had another set-back. New Eland diamonds have become another weak factor, with sellers at par. No business was done in any of the Modderfonteins. The market was quiet during the afternoon, a great number of members preferring the attractions of the War Market. A sale of New Modders took place at £23 5s. On Thursday morning, with the exception of Springs Mines and Modder Easts, all the important stocks were marked down again. Someone took a fancy to Main Reef Wests and bought 3,500 at 2s. 6d. The dealings in outside stocks for the week were:—Sales: South Van Ryns, 11s., 10s. 9d. and 10s. 6d.; Phoenix, 11d.; S.A. Alkalies, 80s., 75s. and 70s.; New Farms, 1s. 10d. and 1s. 9d.; Invictas, 20s.; Monteleos, 36s. and 35s.; Compound Diamonds, 5s. Buyers: Union Tins, 3s. 6d.; Sakalavas, 5s.; Henderson's Options, 1s. 1d. There were no selling quotations for the above.

* * * *

The favourites were again easier on Friday morning, the only improvements on the list being in Kleinfonteins, Zaaiplaats and Cloverfields. The following are the changes in prices:—Sales: Cloverfields, 8s. 7d. and 8s. 8d. and buyers: Daggafonteins, 25s. 3d.; East Rand Mining, 14s.; Government Areas, 71s., and sellers; Jupiters, 4s. 6d.; Lydenburg Farms, 7s. 3d.; Springs, 66s. 6d. and 66s. 3d.; Zaaiplaats, 9s. 3d. Buyers and sellers: New Modders, £23 5s. sellers: Eland Diamonds, 20s. buyers: Kleinfonteins, 17s. 9d.—18s.; Rand Selections, 86s.—88s.; Sub Nigels, 23s. 6d.—24s.

* * * *

	Fri., 7th.	Sat., 8th.	Mon., 10th.	Tues., 11th.	Wed., 12th.	Thurs., 13th.
African Farms . . .	8 0*	8 0*	8 0*	8 0*	8 0*	8 0*
Apex Mines	7 0*	—	6 10*	7 0*	7 0*	6 11*
Aurora Wests . . .	13 0*	—	13 0*	—	—	—
Bantjes Consolidated	2 9*	2 11†	3 0†	2 10	2 10	2 7*
Brakpan Mines . . .	113 3*	112 6*	114 6†	114 6†	114 6†	113 0†
Breyten Collieries .	12 6*	12 6*	12 6*	12 6*	12 6†	—
Brick and Potteries	5 0*	—	—	5 0*	—	5 0*
British South Africa	—	14 6†	—	—	—	14 6†
Bushveld Tins . . .	0 8†	0 9	0 6*	0 9†	0 9†	0 9†
Cinderella Cons. . .	5 0†	—	—	4 0†	4 0†	—
City and Suburbans	19 6†	19 0†	18 0*	18 9	18 0*	—
City Deeps	62 9	61 6*	61 3*	61 6*	62 6	62 0
Cloverfield Mines .	8 8	—	8 7	8 6*	8 6*	8 5*
Clydesdale Collieries	12 0*	12 0*	12 0*	12 0*	12 0*	—
Concrete Construction	3 10*	3 9*	3 9	3 9*	4 0†	3 9*
Con. Investments . .	19 0*	19 0*	19 0*	19 0*	19 0*	19 0*
Con. Langlaagtes . .	18 0†	18 0†	—	18 0†	18 0†	18 0†
Con. Main Reefs . .	14 0*	14 0*	14 0	13 9*	13 9*	14 6†
Con. Mines Selection	26 3*	—	26 0†	25 6*	27 0†	25 9†
Coronation Collieries	31 0*	31 0*	31 0*	31 0*	32 0*	32 0*
Coronation Freeholds	0 4*	0 5*	0 5*	0 5*	0 5*	—
Crown Diamonds . .	—	1 9*	1 9*	1 9*	1 9*	—
Daggafontein Mines	25 3*	25 0*	25 3	25 3*	25 0*	25 0*
Do. Options . . .	10 3*	10 3*	10 6*	10 9*	10 9*	10 9
Durban Rood. Deeps	—	11 0†	11 0†	11 0†	—	—
East Rand Coals . .	2 0*	2 0*	2 0*	2 1*	2 1*	2 0*

*Buyers. †Sellers. ▲Odd lots. ■Ex London.

	Fri., 7th.	Sat., 8th.	Mon., 10th.	Tues., 11th.	Wed., 12th.	Thurs., 13th.
East Rand Deeps . .	0 10*	0 11*	0 11*	0 11*	0 11*	0 11*
E.R. Minings . . .	14 0*	17 0†	—	—	—	13 0*
East Rand Props. . .	5 0*	5 6†	5 0*	5 6†	5 6*	5 0
East Rand Deb. . .	£61*	£61*	£61*	£61*	£61*	—
Eastern Golds . . .	1 1*	1 1*	1 1*	1 1*	1 1*	1 1*
F. Smith Diamonds .	3 3*	3 0*	3 1*	3 0*	3 3*	3 2
Geduld Props. . . .	39 6	39 6	38 6	37 9*	37 6*	37 5*
Geldenhuis Deep . .	—	20 0†	20 0†	—	20 0†	20 0
Glencairns	1 3*	2 0†	2 0†	1 3*	1 0*	—
Glenoce Collieries .	—	8 6*	8 6	8 6*	8 6*	—
Glynn's Lydenburgs	20 0†	20 0†	18 0*	—	15 0*	—
Government Areas .	73 6	72 7	71 9	72 0	71 6	71 3*
Jupiters	4 6*	5 0†	4 6*	—	4 6*	—
Klerksdorp Props. .	—	—	1 9*	2 0*	1 9*	1 9*
Knight Centralis . .	3 0*	3 0	2 10*	2 9*	2 10*	2 10*
Knights Deeps . . .	—	—	5 0*	—	5 0*	—
Lace Props.	9 11	10 0	9 10	10 3*	9 11	9 11
Leeuwpoort Tins . .	15 6†	—	15 6†	15 0	15 6*	15 6*
Luipaardsvlei Estate	—	—	6 0*	6 0†	5 0†	5 0†
Lydenburg Farms . .	7 7	7 6*	7 6*	7 4*	7 3	7 4*
Main Reef Wests . .	2 9†	2 7*	2 6*	2 4*	2 3*	2 6
Meyer and Charltons	107 0†	—	107 0†	98 0*	100 0*	—
Middelvlei Estate .	1 0*	1 0*	1 0*	1 3†	1 0*	1 6*
Modder B.'s	174 6*	171 0*	173 6†	171 0*	171 0*	167 6*
Modder Deep	—	149 0*	147 6*	150 0*	150 0*	150 6*
Modder Easts	21 6	21 1	21 0	21 4	21 0*	21 0*
Do. Options (3 yrs)	7 4	7 3	7 0*	7 2*	7 2*	7 1
Do. Options (4 yrs)	8 5*	8 3*	8 1*	8 2*	8 4*	8 3
Natal Navig. Col. . .	—	19 0*	19 0*	—	19 0*	—
National Banks . . .	260 0†	—	260 0A	260 0†	—	260 0†
New Boksburgs . . .	1 2*	1 2*	1 2*	1 1*	1 2*	—
New Eland Diam. . .	25 0†	—	20 0*	20 0	19 6*	19 6*
New Era Cons. . . .	10 6*	10 6*	10 6	10 6	10 3*	10 6
New Geduld Deeps .	6 0*	6 3	6 1	6 1*	6 1*	6 1*
New Heriots	36 0†	30 0†	—	25 0*	29 0†	—
New Kleinfonteins .	17 6*	17 6	—	17 3*	17 3*	17 3*
New Modder	175 0A	177 6†	175 0†	170 0†	—	—
New Primrose . . .	—	3 0†	1 9*	2 0*	2 0*	2 6*
New Rietfonteins . .	1 4*	1 4*	—	1 4*	1 0*	1 4*
New Unifids	—	7 6†	7 6†	7 6†	7 6†	7 0†
Nigels	2 3*	2 3*	2 3*	2 3*	2 3*	2 3*
Nourse Mines . . .	20 0*	20 0*	20 0*	—	19 6*	19 3*
Pretoria Cements . .	—	—	98 0†	95 0*	—	—
Princess Estates . .	—	2 6†	2 6†	—	2 0*	2 0*
Rand Collieries . . .	4 0†	4 0†	4 0†	4 0†	4 0†	4 0†
Rand Klips	9 6*	9 0*	9 9†	9 1*	9 3*	9 0*
Rand Nucleus . . .	—	—	1 4*	—	—	1 3*
Rand Select. Corp. .	89 0*	88 0*	88 6*	87 6*	88 0	87 6
Randfontein Deeps .	4 1*	4 0*	4 0*	4 0*	4 0*	—
Randfontein Est. . .	12 9*	12 9*	12 9*	12 9*	13 0†	12 9
Rooibergs	10 0†	9 7*	9 6*	9 6*	9 9*	9 7*
Rose Deeps	19 0*	19 0*	18 0*	—	18 6*	18 0*
Ryan Nigels	3 6†	—	3 6*	3 6†	—	3 6†
Shebas	—	—	1 0*	1 0*	—	—
Simmer Deeps . . .	2 6*	—	—	—	—	—
S.A. Breweries . . .	29 0†	—	29 0†	28 6†	—	28 0†
S.A. Lands	—	5 3	5 3	5 3	5 3	5 2
Springs Mines . . .	69 0	68 3	67 6	67 6	67 0	67 3
Sub Nigels	24 0*	24 0*	24 0*	23 9*	23 9*	23 9*
Swaziland Tins . . .	—	22 6*	22 0*	22 6*	22 6*	22 6*
Transvaal Lands . .	—	15 0†	—	—	14 0†	14 0†
Trans. G.M. Est. . .	14 0	—	16 0†	16 0†	16 0†	15 0†
Van Ryn Deeps . . .	72 0	71 6	71 0	71 6	71 6	70 9
Village Deeps	20 0*	20 0*	20 0*	20 6†	20 0*	20

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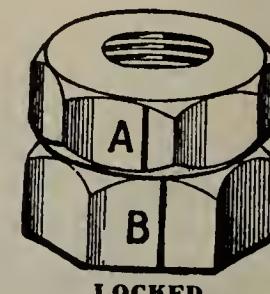
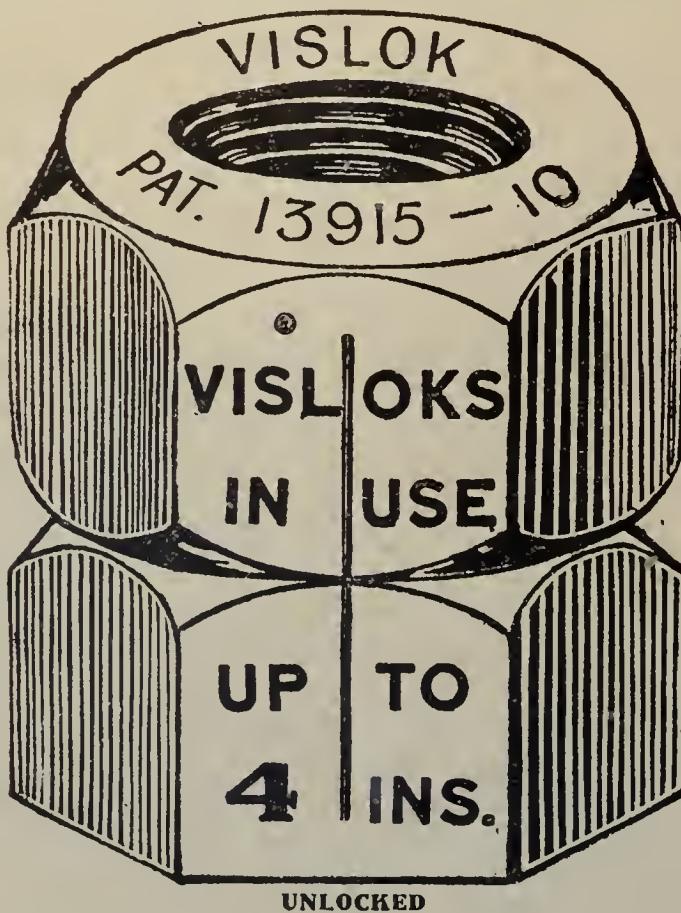
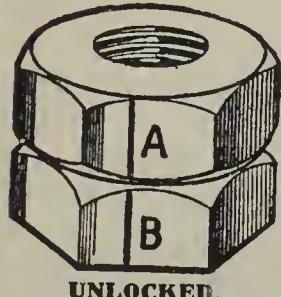
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THE NOVEMBER GOLD OUTPUT IN DETAIL.

Decrease, 28,451 ozs.—Shortage of Native Labour.

The continued shortage of native labour and the thirty-day month of November caused a decrease in the output. The total for last month was 722,839 ozs., a decrease of 28,451 ozs. compared with the October return and of 60,227 ozs. compared with November of last year. The number of natives employed on the 30th November showed a decrease of 1,448 compared with October. The grand totals of the November output were:—

Total	... ... ... ...	722,839 ozs.
Value	... ... ... ...	£3,070,426
Decrease	... ... ... ...	28,451 ozs.
Value	... ... ... ...	£120,853
Witwatersrand	... ... ... ...	698,271 ozs.
Value	... ... ... ...	£2,966,069
Decrease	... ... ... ...	26,575 ozs.
Value	... ... ... ...	£112,884
Outside Districts	... ... ... ...	24,568 ozs.
Value	... ... ... ...	£104,357
Decrease	... ... ... ...	1,876 ozs.
Value	... ... ... ...	£7,969
Stamps	... ... ... ...	9,360
Decrease	... ... ... ...	75

THE CONTRIBUTING MINES.

		Value.	Increase.	Decrease.
Aurora West	... ...	£17,076	—	£586
Bantjes Consolidated	... ...	27,092	£3,118	—
Brakpan Mines	... ...	98,522	—	9,757
City and Suburban	... ...	39,669	—	6,126
City Deep	... ...	119,344	—	3,568
Cons. Langlaagte	... ...	56,338	—	548
Cons. Main Reef	... ...	40,986	1,138	—
Crown Mines	... ...	203,806	—	9,698
Durban Roodepoort	... ...	11,749	—	1,423
Durban Roodepoort Deep	... ...	34,075	—	591
East Rand Proprietary	... ...	154,282	6,355	—
Ferreira Deep	... ...	67,870	—	3,598
Geduld Proprietary	... ...	57,315	565	—
Geldenhuis Deep	... ...	62,297	—	1,610
Ginsberg	... ...	13,529	—	565
Glencairn	... ...	13,690	—	476
Government Areas	... ...	153,989	—	4,838
Jupiter	... ...	23,388	—	1,737
Knight Central	... ...	27,415	—	2,145
Knights Deep	... ...	71,468	1,291	—
Langlaagte Estate	... ...	44,457	—	4,192
Luiopaardsvlei	... ...	21,026	—	1,075
Main Reef West	... ...	31,153	387	—
Meyer and Charlton	... ...	42,482	319	—
Modder B.	... ...	99,087	—	14,319
Modder Deep	... ...	83,404	—	2,651
New Goch	... ...	17,080	—	1,164
New Heriot	... ...	19,816	—	1,164
New Kleinfontein	... ...	77,343	—	4,524
New Modder	... ...	126,922	510	—
New Primrose	... ...	15,334	—	183
New Unified	... ...	12,833	—	399
Nourse Mines	... ...	48,743	—	4,498
Princess Estate	... ...	28,039	—	1,385
Randfontein Central	... ...	191,937	—	12,107
Robinson	... ...	52,973	—	2,464
Robinson Deep	... ...	64,421	—	2,574
Roodepoort United	... ...	30,996	—	—
Rose Deep	... ...	69,081	—	4,821
Simmer and Jack	... ...	72,891	5,586	—
Simmer Deep	... ...	45,434	—	4,124
Springs Mines	... ...	61,123	—	1,333
Van Ryn Estate	... ...	38,722	—	2,893
Van Ryn Deep	... ...	96,428	—	2,761
Village Deep	... ...	74,828	—	1,183
Village Main	... ...	36,203	—	3,186

	Value.	Increase.	Decrease.
West Rand Consolidated	36,424	650	—
Witwatersrand	41,989	—	3,895
Wit. Deep	37,329	—	2,192
Wolhuter	38,905	—	2,821
Miscellaneous	3,796	—	3,292

OUTSIDE DISTRICTS.

Nigel	... ...	12,403	—	3,339
Sub Nigel	... ...	24,229	344	—
Barrett	... ...	1,131	72	—
Sheba	... ...	6,373	—	612
Glynn's	... ...	6,975	—	1,143
T.G.M.E.	... ...	29,042	—	2,595
Miscellaneous	... ...	23,833	—	696

LABOUR FIGURES.

The number of natives employed at the last day of the month by the W.N.L.A. and contractors were:—On gold mines, 169,083; on coal mines, 11,633; on diamond mines, 4,620; total, 185,336. The figures for October were: On gold mines, 170,531; on coal mines, 11,841; on diamond mines, 4,620; total, 186,992.

Consolidated Gold Fields Group.

The following are particulars in regard to the outputs and profits for the month of November of the undermentioned companies of the Consolidated Gold Fields group:—

Company.	No. of Stamps.	Tube Mills.	Tons Crushed.	Gold declared.	Total Fine Ozs.
Simmer and Jack	320	7	55,300	16,410	£21,117
Robinson Deep	130	8	49,800	15,166	10,739
Knights Deep	400	11	98,600	16,825	2,006
Simmer Deep	220	10	44,200	10,936	4,160
Jupiter	80	5	24,200	6,683	4,365
Sub Nigel	30	2	9,330	5,589	8,025
Totals	1180	43	281,430	71,609	£50,412

Reserve Gold.—Simmer and Jack, 7,300 ozs.; Simmer Deep, 1,220 ozs.; Jupiter, 1,100 ozs.; Sub Nigel, 2,581 ozs.; total, 12,201 ozs.

The sundry revenue included in the above total declared profit is as under: Simmer and Jack, £1,500; Robinson Deep, £212; Knights Deep, £246; Simmer Deep, £472; Jupiter, £592; Sub Nigel, £6; total, £3,028.

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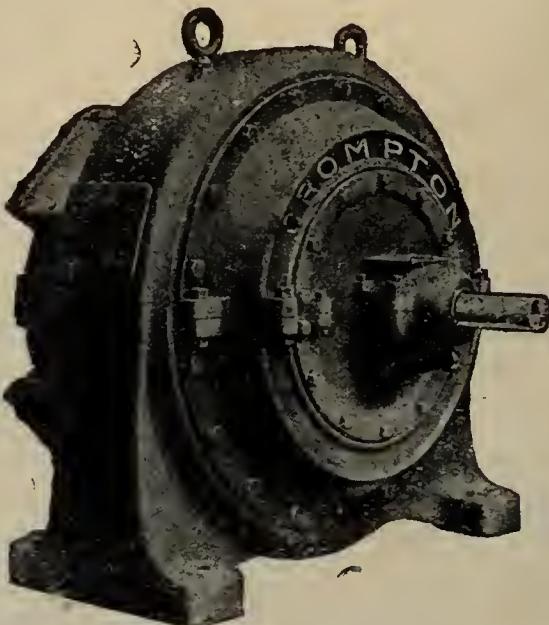
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Barnato Group.

The results of operations of the Barnato group for November are as follows:—

Mine.	Stamps.	Tons Crushed.	Revenue from Gold
Consolidated Langlaagte ...	100	44,400	£56,338
Ginsberg	75	14,480	13,530
Glencairn	160	21,100	13,689
Government Areas	180	102,400	153,987
Langlaagte Estate	200	40,560	14,456
New Primrose	140	18,000	15,332
New Unified	60	13,000	12,833
Randfontein Central	600	165,260	191,936
Van Ryn Deep	80	43,800	96,428
Witwatersrand	215	33,800	41,988
Totals and averages ...	1810	496,800	£640,517
October totals ...	1830	524,260	£670,485
Mine.	Total Working Costs.	Working Costs per Ton Milled. Shillings.	Gross Profit includ- ing Sundry Revenue.
Consolidated Langlaagte ...	£11,284	18·596	£15,225
Ginsberg	12,617	17·427	1,003
Glencairn	12,575	11·919	1,254
Government Areas	96,004	18·751	58,534
Langlaagte Estate	36,507	18·002	8,068
New Primrose	13,603	15·115	1,808
New Unified	9,407	14·472	3,486
Randfontein Central	162,231	19·633	*30,475
Van Ryn Deep	43,072	19·668	55,028
Witwatersrand	30,709	18·170	13,001
Totals and averages ...	£458,009	18·438	£187,882
October totals ...	£477,330	18·210	£198,600

* Reduced profit due to disorganisation caused by strike.

Monthly Gross Profit, 1917.—January, £232,859; February, £213,944; March, £225,477; April, £210,598; May, £200,264; June, £206,506; July, £203,650; August, £209,489; September, £197,556; October, £198,600; November, £187,882.

ANSWERS TO CORRESPONDENTS.

All enquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to enquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.

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THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.

Supply and Demand More Equal—Bright Forecast After the War—"Profiteering" and Speculating Elements—American Steel Values to be Revised January 1, 1918—Stocks in Johannesburg.

THE Chamber of Mines' quarterly report obviously is a general review of the position and thus always interesting, but on this occasion it is more so, because of the war conditions. The question of the low-grade mines was again dealt with. However, we can attend the War Market and eat our Christmas dinner in peace as no disturbing element, so far as the mines are concerned, will occur this year. As Johannesburg is in a very good mood over the War Market, it is as well that the bright side of the position be noticed. The manager of the Consolidated Gold Fields stated that if the low-grade mines could be kept alive, it was no stretch of imagination to realise what the prosperity of the industry would be after the war. With all the present mines working, he continued, and with the Far East Rand fast extending operations, they would have such a state of prosperity on these fields as they never had before, which would be reflected throughout the whole of South Africa and just at the time when the country would be endeavouring to recuperate from the ill-effects of the war. Therefore he thought they should ask the Government to seriously consider the position of these mines and see whether they could in any way assist them. Special enquiries have been made amongst the merchants and others in close touch with the mining directors, and the almost unanimous opinion was that earnest efforts will be made to keep all the mines running. Possibly a modification as regards the developing conditions will be necessary, and so on. With regard to the question of profiteering it was stated that the Chamber

had investigated with the utmost care the prices that were charged for the essentials of the mining industry. There were indications that these prices were excessive, and they went into each individual case with the merchants and they found all the reputable merchants were not profiteering, and were charging a reasonable rate for their goods, bearing in mind the enormous increases in freight, insurances, and other charges. There had been cases where excessive rates had been charged, but these were few and far between. From personal enquiries from week to week, the question of profiteering, it can be said, was thus summed up very well; however, it requires some qualification. In the first place the competition is so keen, coupled with trade rivalries and trade jealousies, that the position creates its own profiteering antidote. Again, the method of



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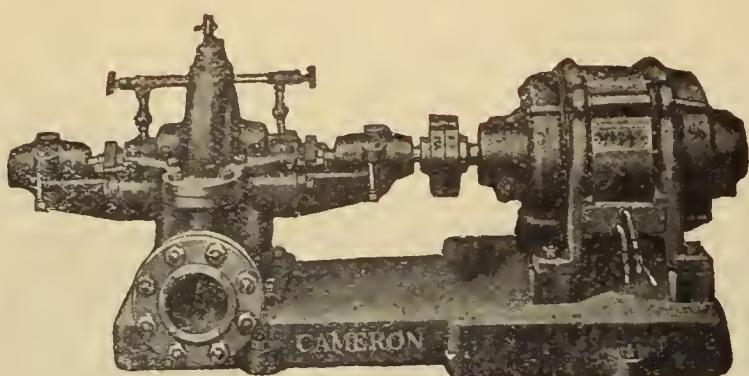
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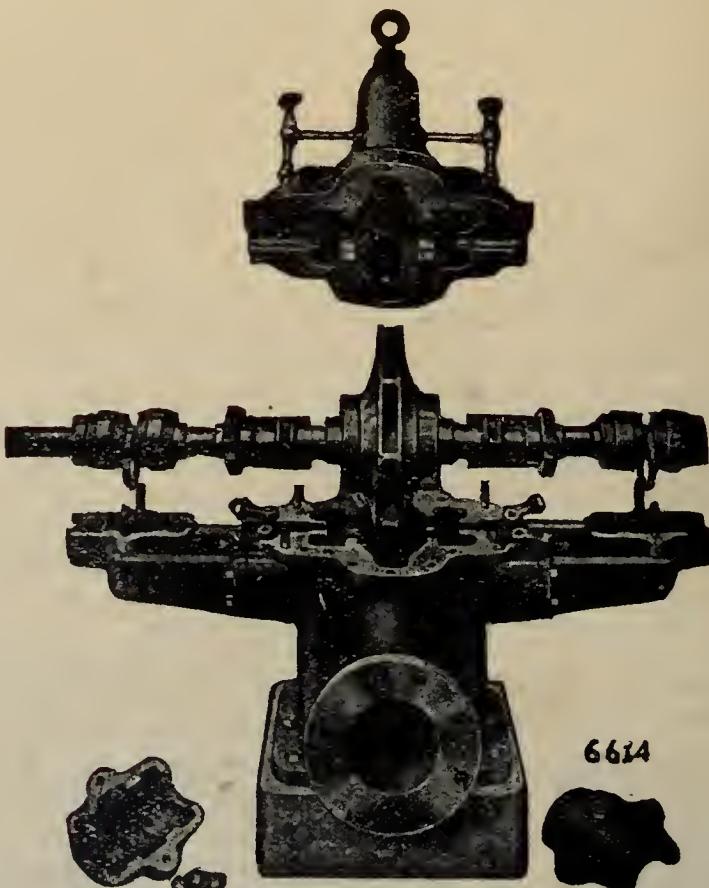
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putting in several tenders through indirect sources for the same (new) materials held by one or two holders only is quickly recognised and treated accordingly. The true facts of the case are that when the smaller holders had sold out and had the proceeds in the bank, they soon became weary of having seven Sundays in the week, therefore they quickly turned their attention to speculation. Now when a commodity gets into the speculative stage it usually requires an expensive committee to draw the line between healthy speculation and profiteering. When this imaginative line is drawn and the blue or black book is published, the speculators have secured their profits and gone to the coast for a holiday. Although the speculative element is often looked upon askance, yet healthy speculation is undoubtedly the "baking powder to the loaf" of new and progressive enterprises.

AMERICAN STEEL PRICES: IMPORTANT REDUCTIONS.

According to advices from the United States under date of September 25th, 1917, the steel producers have agreed to the Government price for steel bars at Pittsburgh and Chicago of 2.90 dollars per cwt., as compared with the then present price of 5.50 dollars. There is no change in the price of ore, but the pig iron interests agreed to 83 dollars per ton, a reduction of 43.1 per cent., while the price of steel shapes is 3 dollars per cwt., a reduction of 50 per cent., and the price of steel plates is 3.25 dollars per cwt., a reduction of 70.5 per cent. The steel prices were to be the same to the United States Government, the Allies and the public, but there was no reduction in wages. The steel interests pledged themselves to make every effort to keep up the maximum output of production as long as the war lasts. These prices, however, are subject to revision on

January 1st, 1918. In *The Star* on Wednesday a Reuters' message stated that in an interview of the chairman of the American War Industries Board with the leading representatives of the steel industry, the Government were assured that all the steel necessary would be forthcoming, and that there would be no delay in turning out munition necessary for victory.

THE CHRISTMAS AND OTHER HOLIDAYS.

According to the extraordinary total of twenty-six thousand attending the War Market on the opening day, undoubtedly the holiday mood will extend well over the public holiday on Dingaan's Day—Monday, the 17th inst. The Commercial Exchange will be closed for the Christmas holidays from Saturday, December 22, at midday until 8.30 on the following Thursday morning. For the New Year there will be one holiday only, viz., January 1st, 1918. Hence with all these holidays very little activity in business is expected until the turn of the year. Then very much will depend upon war conditions and the shipping problem, which no one in the shipping line in Johannesburg will venture an opinion upon, seeing that America, both North and South, are in for winning the war.

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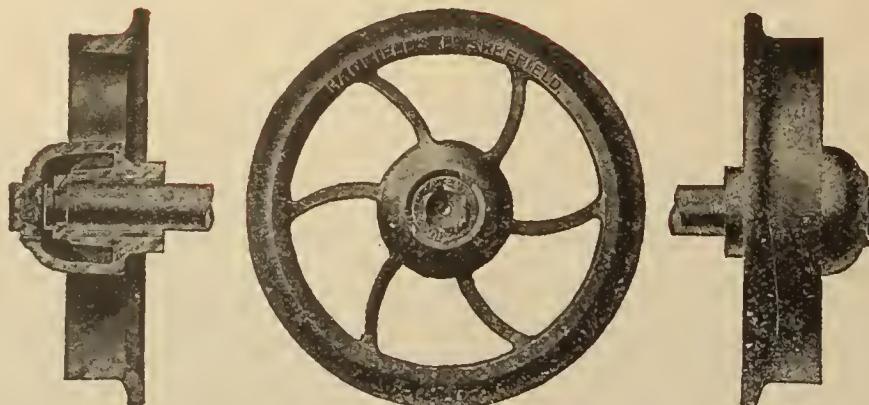
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STOCKS IN JOHANNESBURG.

The tone of the tendency is easier, at all events as regards stocks, both new and second-hand, particularly the latter. Fair quantities of various mining essentials have been dribbling through from the United Kingdom, as well as big lots from America and Canada. From Canada there was a large consignment of steel plates received recently, for the shipping interests, but not accepted, presumably because of the unsuitability of the odd lengths, as some extended to 30 feet and the various thicknesses comprised wide margins. So that when the original consignees demurred, the railway authorities stepped into the breach and secured 580 tons at a fairly reasonable price. Therefore, this will put one of the largest consumers out of the market for a time. Steel plates are still very scarce, but when they are actually wanted they are found at the enhanced values which now rule from 72s. 6d. to 75s. per 100 lbs., with exceptional prices for exceptional sizes. A lull in the demand for corrugated roofing iron enabled stocks to accumulate, and as the tile makers will not accept orders under three months or so, there has been a renewed demand for galvanised iron. Again, there is the case of white lead, and now that acute shortage is over, through arrivals from London and America, assisted by factories having started in South Africa, the scarcity cloud has lifted. One large consumer was asked what he thought of the local enterprise. He replied: "Show me a sample and I will quickly give an opinion." But whatever happens in the preliminary stages of manufactured white lead in this country, the pure ingredients will be there, so that it will not be wasted in any case. Linseed oil is still in the perplexing stage, although more can be had from India if ships are available, but seeing the war exigencies demand that Indian grain be carried to Great Britain the question is whether the South African route will have to suffer for a time. As regards painting ingredients the smaller contractors and jobbers have husbanded fair stocks of lead, linseed oil and turps; also as a stand-by there are exceptionally large stocks of imported and locally-made mixed paints in town. One maker was asked as to the supply of tins, when he replied that he was exceptionally well situated as he had encouraged purchasers to preserve the tins for re-filling. Generally the oil and colour merchants report that they can supply any reasonable requirements for their ordinary customers, but they are not worrying about outside orders, for whilst they feel the shortage position is

relieved, yet after past experience a conservative policy is advisable. The easing of supplies has brought more sellers into the market, as no fewer than three dealers remarked on Thursday that they were clearing out the balance of their small stocks now there was only "one buyer" in the market.

SECOND-HAND MATERIALS.

It is singular that the second-hand market is easier both in the tendency of lowering values and the increased supplies of machinery and mining sundries. The new master of Randfontein Estates is evidently using the proverbial new broom with some effect, as a quantity of machinery and sundries have come into the market. The original Vigelstruis Company are also offering a big lot of machinery and mining materials, as well as sundries galore. The builders' yards have also accumulated stocks, but considerable quantities of roofing iron have been purchased lately on account of the continuous heavy rains.

VARIOUS COMMERCIAL ITEMS.

Heavy demands are in evidence from Natal for 20 and 30 lb. rails, presumably because the Transvaal iron factories are behind with the orders on hand and decline others under three months to start delivery. There is a shipment of shovels on the way from America; the freight and insurance charges with incidentals come to about 10s. per dozen, and the original cost 30s., therefore they cannot be sold here under 80s. Timber values remain stationary, but deals must advance as new consignments cannot be landed here under 1s. 6d. per foot, and there is a talk of shortage for the coming year. Orders are being turned down for bricks and tiles. There is a sudden dearth of orders for pipe fittings; for the first time since the war it is less difficult to obtain fittings from England than America.

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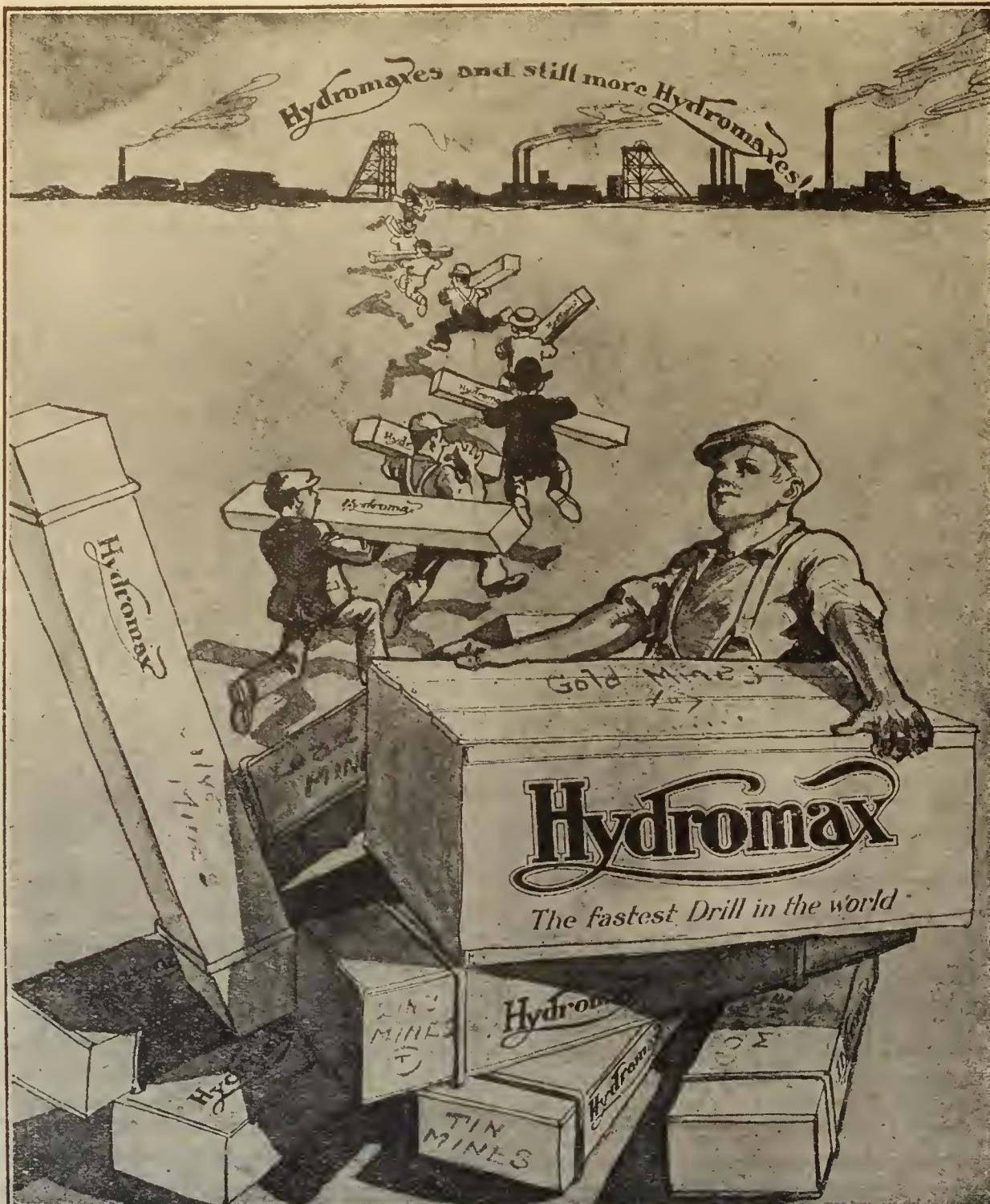
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BRICKS, CEMENT, LIME, ETC.—Pretoria Portland Cement, 9s. 3d. bag; 8s. 3d. truck loads; lime, white, unslaked, 7s.; truck loads, 6s.; slaked, do., 5s.; blue, 3s. 9d.; plaster lime, 4s. 6d.; bricks, stock, delivered, 60s. to 65s.; wire cuts, 60s. to 75s.; pressed, 70s. to 80s. per 1,000; road transport difficult to obtain; salt and white glazed bricks, £35 per 1,000; roofing tiles, £15 to £27½ per 1,000; glazed tiles, 10s. 6d. to 17s. 6d. per yard; paving cement tiles, 8s. 6d. per yard laid; reinforced concrete columns, 6 ft. plain, 22s. 6d.; fluted, 24s.; fireclay bricks, £7½ to £9½, at kiln, per 1,000; clay chimney pots, 36s. to 70s., according to height, 12 in. to 18 in., per dozen.

OILS, PAINTS, LEAD, OXIDE, GLASS.—Linseed, raw and boiled, 13s. per gallon; white lead, 1s. 3d. per lb. and 1s. 1d. in big lots; turpentine, 62s. 6d. 2/4 1-5 gallons; 10/1, 5-6 Imperial tins, 70s.; oxide in oil, 45s. per 100lb.; dry oxide, 16s. to 27s. 6d.; linseed oil putty, 7d. per lb.; paints in tins, 1s. 1d. to 1s. 3d. lb.; British plateglass, 4in., 5s. to 5s. 6d.; do., mirror, 6s.; window, 16oz., 1s. to 1s. 3d. per foot.

GREASE.—Imported, A.F. axle, £30 to £32½; local, £24 to £26 per ton; tallow (local), 6d. per lb.; White Rose paraffin, 19s. 4d. 2/4; Laurel paraffin, 19s. 1d.; petrol, 34s. 6d. to 36s. 6d. 2/4 I.M.P.; motor oil, 7s. to 7s. 6d. per gallon; engine lubricating oils, 30s. to 40s. per case; cylinder, 30s. to 42s. 6d.

CHEMICALS.—Mercury, £55 to £60 75lb. bottle last sale, but now no definite price; bichromate potash, 5s. 6d. lb.; chlorate, 4s. 6d. per lb.; permanganate, 14s. lb.; alum, 6d. lb.; carbolic acid, 7s. 6d. lb.; borax, 100s. 100lbs.; cyanide sodium, 1s. 3½d. to 1s. 5d. lb.; hypo, 9d. lb.; acetate lead, 77s. 6d. 100lbs.; litharge (assay), 70s. to 72s. 6d. (commercial), 58s. 6d. 100lbs.; zinc sheets and blocks, 1s. 9d. lb.; plum-bago crucibles, 5d. per number.

ELECTRICAL GOODS.—Lamps, high volts, British, Holland and American, 30s. to 36s. wholesale, and 48s. to 54s. doz. retail; carbon lamps, 12s. 6d. doz.; pure rubber flex, 6d. to 8d. yd.; 3/20 coils wire, 42s. 6d. to 45s.; do., 3/22, 23s. 6d.; tubing, 18s. to £1 per 100 ft.; key-holders, 6s. to 7s. 6d. ea., round blocks, 3½in., 4s. doz.; lamp holder cord grips, 13s. 6d. to 15s. per dozen; switches, 5 amp., 42s. to 48s. per dozen; British glass shades, 30s. to 40s. dozen; porcelain shackles, 15s. to 18s. dozen; do., bobbins, 15s. to 25s. per 100; cleats, 22s. per 100; P.O. insulators, 18s.; motor, 3 h.p., about £35 to £37, new.

IRON.—Imported, ¼in. and ⅜in. round, 8d. to 10d. lb.; ½in. round, 72s. 6d. to 75s. 100lb.; ¾in. round, 47s. 6d. to 50s. 100lb.; 1in. upwards, round, 32s. 6d. to 40s. per 100lb.; square iron, 30s. 100lb.; flat iron, small shoeing sizes, 45s. to 50s.; flat, average width and thickness, 28s. 6d. to 30s.; round iron, local, 7in. upwards, 25s. 6d. per 100lb.; square iron, local, 7in. upwards, 25s. 6d. per 100lb.; flat iron, average widths and thickness, 25s. 6d.; mild steel bar, 6½d. to 9d. per lb.; drill, 10d. to 1s. per lb.; steel plates, 70s. to 80s.; some sizes unobtainable; hexagon and cuphead bolts, ¼in. diameter, 28s. per lb.; 5-16in. diameter, 1s. 9d. per lb.; ¾in. diameter up to 3in. long, 1s. 6d. lb.; ¾in. dia., 11d., 3½in. and up long, 1s. 1b.; ½in. dia. up to 2½in. long, 70s. 100lb.; ½in. dia. and 2½in. up long, 70s. per 100lb.; ½in. diameter up to 2½in. long, 57s. 6d. per 100lb.; ½in. dia., 2½in. and up long, 55s. per 100lb.; ¾in. diameter, 2½in. and up long, 50s. 100 lbs.; ½in. and 1in. dia., same price as ¾in. diameter; nuts, ¾in., 1s. 3d. per lb.; ½in., 82s. 6d.; ½in. to 1¼in., 75s.; 1½in. and 1½in., 85s.; 1½in. to 1¾in., 87s. 6d.; 2in. up, 72s. 6d.; washers, all sizes, 45s.; rivets, 3-16in., 1s. 6d. lb.; ½in., 5-16in., 1s. 6d. lb.; 7-16in., ½in., 1s. 1b.; ½in., 1s. 1b.; ½in., 62s. 6d.; ¾in. up, 59s. 100 lb.; shoes and dies, 32s. 6d. to 35s. 100lb.; rails, £25 per ton; picks, 4lb., 40s. per doz.; shovels, 65s. to 70s. per doz.; drill hammers, 5½d. to 6d. per lb.; hammer handles (best American), 14in., 3s. 6d.; 24in., 7s.; 30in., 9s. 6d.; 36in., 13s. per dozen; metal, anti-friction knoxite, 10d. to 3s. 6d. per lb.

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(Registered under the Limited Liability Laws of the Transvaal.)

NOTICE TO SHAREHOLDERS of EXTRAORDINARY GENERAL MEETINGS.

NOTICE IS HEREBY GIVEN that an Extraordinary General Meeting of the Shareholders in the PRINCESS ESTATE AND GOLD MINING COMPANY, LIMITED, will be held in the Board Room, 94, Main Street, JOHANNESBURG, on Monday, the 18th day of February, 1918, at Eleven o'clock in the forenoon, for the purpose of considering the advisability of, and if thought fit passing, with or without modifications, the following resolutions, viz.:

1. That the first portion of Article 48 of the Articles of Association from the words "The Company" in line one inclusive, down to and including the words "Notwithstanding this provision" in line five, be and it hereby is expunged, and that the word "also" in line six of the said Article be and it hereby is expunged.

2. That the existing nominal and issued Capital of the Company be reduced from £575,033 (Five Hundred and Seventy-five Thousand and Thirty-three Pounds) in 575,033 (Five Hundred and Seventy-five Thousand and Thirty-three) shares of the nominal value of £1 each, all issued as fully paid up, to £57,503 6s. (Forty-seven Thousand Five Hundred and Three Pounds Six Shillings), divided into 575,033 shares of the nominal value of Two Shillings (2s.) each, all fully paid, and that such reduction be affected by writing off paid-up Capital to the extent of Eighteen Shillings (18s.) per share, upon each of the 575,033 shares which have been issued and are now outstanding and by reducing the nominal value of all the shares in the Company's Capital from £1 to 2s.; and that the Chairman of the Company for the time being be and he is hereby authorised and directed to apply to a Competent Court for the confirmation of the said reduction.

3. That the Directors of the Company be and they hereby are authorised and instructed to increase the reduced Capital of the Company of £57,503 6s. to £107,503 6s. by the creation of 500,000 new shares of Two Shillings (2s.) each forthwith after the said reduction shall have been confirmed by the Court and shall have been duly registered, but not otherwise, and to allot and issue the said 500,000 shares at the price of 2s. per share to Messrs. A. Goerz & Co., Ltd., and/or their nominees appointed by the said A. Goerz & Co., Ltd., in writing and/or their assigns in such numbers as may be notified on subscription, such shares to be taken up and paid for in Johannesburg and/or in London at the option of the said A. Goerz & Co., Ltd.

SHOULD THE ABOVE-MENTIONED RESOLUTIONS BE PASSED in the manner required for the passing of Extraordinary Resolutions, they will be submitted for confirmation as Special Resolutions to another Extraordinary General Meeting of the Company, which will be held at the same time and place on the 13th day of March, 1918.

If the above scheme be carried through in its entirety, a sufficient number of the 500,000 new shares will, by arrangement with Messrs. A. Goerz & Co., Ltd., be offered to South African Shareholders, and, provided the consent of H.M. Imperial Treasury is obtained, to Shareholders in the United Kingdom, at par, subject to the conditions contained in the Explanatory Circular issued to Shareholders by the Company and dated 11th December, 1917, a copy of which may be obtained on application at the Office of the Company.

Holders of Share Warrants to Bearer, who desire to attend or vote at the Meetings, must deposit their Share Warrants at one of the places and within the times stated below:

In Johannesburg, at the Head Office of the Company at least 24 hours before the time appointed for the first Meeting.

In London, at the London Transfer Office, Pinners Hall, Austin Friars, E.C.; or in Paris with Mr. M. Tourret, 25, Rue de Clichy, at least 30 clear days before the time appointed for the first Meeting.

For Share Warrants so deposited a Certificate will be issued entitling the holder to attend and vote at the Meetings in the same way as if he were a Registered Member of the Company.

Share Warrants deposited in Europe will be released on and after the 14th March, 1918, against surrender of the Company's receipt.

The Transfer Registers of the Company will be closed from the 16th day of February to the 13th day of March, 1918, both days inclusive.

By Order of the Board.

R. W. E. HAWTHORN,
Acting Secretary

Head Office: 94, Main Street
(P.O. Box 1125), Johannesburg.
11th December, 1917.

The Week's Meetings.

CHAMBER OF MINES.

The President of the Transvaal Chamber of Mines, Mr. E. A. Wallers, in moving the adoption of the report of the Executive at the quarterly meeting on December 10, said:—Gentlemen,—I laid some emphasis at the quarterly meeting of the Chamber held in September last on the grave situation in which a section of the industry was placed as a result of the combined burden of an acute native labour shortage, together with the ever and very heavily increasing operating costs—to-day I fear the gravity of the situation is accentuated. As regards the native labour position, I then expressed the opinion that there were some very slight signs of improvement. I am sorry to say that that opinion has not been confirmed by results, as the wastage has been very heavy. You will see from the report in your hands that at the end of October there were rather fewer natives employed on the gold mines than when I last addressed you, and our position to-day is no better. Comparing the numbers now with those employed, say, two years ago, when the supply was good, we find that the reduction in native labourers over the two years is no fewer than 40,000. Indeed, if we ignore the period of disorganisation that followed the strikes of July, 1913, and January, 1914, we see that the gold mines at the present time employ less coloured labour than has been the case in any year since 1909. I need only point out to you that in 1909 the tonnage crushed on the Witwatersrand amounted to no more than 20,500,000 tons, and that in 1915 and 1916 the crushing was at the rate of 28,500,000 tons per annum to make you realise very clearly the impossibility of continuing operations on the 1915-1916 scale with the native labour that is now available, apart from the other considerations respecting the serious situation in regard to glycerine, etc., to which I shall refer presently. The causes that have led to this restricted native labour position must be thoroughly familiar to you, and I will only touch on them briefly. They consist of the re-opening of diamond mines, increased operations of the coal mines, the recruitment of natives for work in connection with the war, the expansion of local industries and the insistent and growing demands of the farming community for labour. Added to this we have the increased demands from our own industry, particularly as a result of the opening up of the Far East Rand. The one satisfactory feature in the native labour position has been the steadiness of the East Coast supply. The number of East Coast natives employed by the Witwatersrand Native Labour Association at the 20th of November last was 79,540, as compared with 80,580 two years ago. That, as you will see, is only a very slight reduction, and it is clear that had it not been for this steady factor our position would have been even more difficult. So you will realise that whereas the excellent native labour supply in the two first years of the war neutralised to some extent the heavily increased burdens upon the mining industry, yet at the present moment the native labour supply far from being a favourable factor is in

itself one of the chief of the many difficulties with which we have to contend. Experience has shown the rashness of any prophecy in regard to native labour, even by the greatest experts on the subject, but I feel bound to say that I see no prospect of any considerable rapid and permanent improvement in the supply available for the mines from present sources.

Explosives.

The next feature of great difficulty which is upon us is our position respecting the explosives necessary for the continuance of our operations. The Imperial Government have decided to reduce the quantity of glycerine set aside for the requirements of the Union, and consequently the Union Government has advised that a 20 per cent. reduction in the glycerine available for the manufacture of explosives for the mines will take place as from the beginning of next year. As you are aware, very considerable economy in the consumption of nitro-glycerine has been achieved by the mines since the commencement of the war, and has resulted in a reduction in the consumption of glycerine from nearly 500 tons per month to approximately 350 tons per month. I do not think it is possible, therefore, to meet the further reduction that is required from any additional economies and consumption if the present scale of operations is to be maintained. It is probable that a little further economy may be effected, and the earnest co-operation of all (management and workmen) is required to this end; but if the present scale of operations is to be continued we must either rapidly increase the local production of glycerine in the Union or be able to use a substitute or substitutes for the nitroglycerine that is used in the explosives. In connection with the last matter, very satisfactory results have attended an experiment on the Village Deep by the British South Africa Explosives Company in the use of an explosive containing a large proportion of ammonium nitrate, the result showing a decrease of about 30 per cent. in the glycerine consumption. Unfortunately it would appear that the available supply of ammonium nitrate is almost as much restricted as is that of glycerine, and it seems, therefore, that any relief in the way of substitutes must come from explosives other than those having ammonium nitrate as their chief base. The other point of increasing the production of crude glycerine in this country is being thoroughly investigated by a Government Committee, the Scientific and Technical Committee, but it will be some weeks before the report of that committee is available. It is, therefore, clear that at the beginning of the new year a reduction in the explosives available to us must take place, and the consulting engineers and the Chamber's technical advisers are now engaged as a matter of urgency on an investigation into the steps that must be taken to minimise as far as possible the serious effect of this reduction. This problem, like the many others with which we have to deal, is one you will readily perceive of much complexity. It will probably be necessary to assess a glycerine ration for each mine in the same way as the native labour complement has been fixed.

Systemisation of Working Conditions

A great deal of work in connection with the proper adjustment of working conditions as between employer and employed has naturally occupied a large proportion of our time during the last three months. The tendency in these matters is all towards the systemisation of the conditions of work on the mines, which in itself is a desirable end. Dealings with well-organised unions, having behind them much experience of such matters and possessing the ability to control their branches and members, have resulted in standing agreements which it has been found can be carried out satisfactorily by both sides on proper lines. The great difficulty so far in dealing with the union embracing the greatest body of workers on the mines, namely, the South African Mine Workers' Union, has been the meeting of the situations continually arising through action by local branches or by employes on individual mines. It is obvious that we must together evolve a better method in this connection, and therefore, to my mind, the very important recommendation of the Board of Reference, representing employers and employed, that discussed the recent strike at the Mynpacht section at the Randfontein Central is of the greatest significance. It provides that all disputes which prove incapable of settlement between the employes and mine management should be referred to a general Board of Reference before any drastic action is taken by either side. The further recommendation was that reasonable notice of any important change in working conditions should be given to employes, and that employes who as officials of the unions are conveying union instructions, or carrying out union instructions consistent with the other recommendations, should not be liable for dismissal for so doing. I am sure you will agree that these recommendations are reasonable and right, and that they fit in well with the acceptance of the principle that the necessary discipline and authority of the mine managements must be maintained. The recommendations have been agreed to by this Chamber subject to their being also accepted as a whole by the union and with one or two explanatory modifications with which you are familiar. In every part of the world the value of the principles embodied in these recommendations is being clearly recognised, and I feel sure that if we all, both employer and employed, thoroughly realise their value and their necessity we shall do better.

Before leaving this matter I should like to add a word or two on an aspect of industrial conditions which I feel has an importance which cannot be overestimated. That is the urgent necessity on the part of employer and employed of using every effort to create what I can only describe as an industrial atmosphere on every mine and in every section of the Rand which will render impossible precipitated, ill-considered, and therefore extremely unwise action on the part of either or both. I have referred to the creation of this proper industrial atmosphere as a necessity, but it is more than that—it is a clearly defined duty. To achieve real permanent success requires the eventual active co-operation of both sides, but realising as we do our greater responsibilities as employers our course is clear. The

profession of employer, because of course it is a profession, has often been described as one of the highest professions, and it certainly is so because of the opportunity afforded for the consideration and proper adjustment of a thoroughly sound industrial relationship. It is also, I think, an extremely difficult and arduous profession, and to wear down and remove mutual distrust and suspicion and substitute for it that right industrial atmosphere to which I have referred requires infinite patience, tact, and a great deal of imagination. I am not sure that I shall necessarily convey to you what I mean when I say that one of the requisite virtues is imagination, but what I want to convey, partially at any rate, is that if our touch upon industrial problems is heavy, unimaginative, and void of a right sense of humour, we shall do badly. And so our responsibilities and our difficulties are well defined, but I believe we can overcome the latter; indeed, I am convinced that my friends, the managers of the mines of these fields, can do so, because I know what they have already done. They will agree with me that there remains a good deal more to do.

Agreement with Engine-Drivers.

We have entered into an agreement with the South African Engine Drivers' and Firemen's Association relating to locomotive and stationary engine drivers. This agreement, taken in conjunction with that entered into in May last, embraces the whole of the working conditions of this class of employe. Minimum rates of pay have been prescribed, and other arrangements made in connection with overtime, Sunday work and holidays. The Conciliation Board which was established for dealing with differences relating to certificated winding engine drivers has been made applicable to these men also. We have thus concluded a very comprehensive agreement, and we have received much assistance in our work from the Executive Committee of the South African Engine Drivers' and Firemen's Association. A matter in which a great deal of work has been done in regard to this and other sections of employes has been the attempt to define the occupations that are involved. This question is full of difficulty, and there is a good deal yet to do, but it is very necessary work, and I am sure will well repay the labour involved, as it is desirable not only in the interests of the employes but from the point of view of proper organisation.

We have also discussed with the South African Reduction Workers' Association certain questions involving rates of pay and other working conditions. The establishment of minimum rates of pay will necessitate considerable investigation similar to that we experienced with regard to other classes of employes, and it has therefore not been possible with the information at our disposal at the moment to arrive at a decision.

Mining Supplies.

As regards imported mining supplies, you are aware that one of the conditions of our pooling arrangements is that the placing of all orders for such supplies through the Chamber must be countersigned by a representative of the Controller of Imports. He examines the position of the mines and the particular supply which it is desired to order, and only countersigns when he is satisfied that

the position of the local stocks and the possibility of satisfying the order locally justifies the imported order. You will realise that a very thorough investigation regarding the stocks in hand, on order, and the requirements of the mines is available to the Government representative in his inquiries, and therefore every order passed has stood a very thorough test. Owing possibly to the necessary multiplicity of the departments in the Munitions Department in London these facts have perhaps not been entirely appreciated there by all concerned, and the result has been that important mining orders have been hung up owing to a request from the Munitions Department for detailed information from us on matters which have already been settled to the satisfaction of the representative of the Controller of Imports in the Union. We realise, of course, that the issue of a countersigned order for the mines does not necessarily imply that the article in question can be manufactured and delivered, and indeed it is clear from the ever increasing acuteness of the manufacturing position of the United Kingdom that some of our requirements cannot certainly be delivered just when we should like them, and possibly in some cases not at all. It is felt, however, that there is no justification for delaying orders merely for further detailed inquiry as to the position of supplies on this side, since all such matters have been already most carefully gone into by the representative of the Union Government. We have asked the Union Government therefore to represent to the Munitions Department in London that such detailed delays should be avoided, and we have added the suggestion that if the Munitions Department is at all dissatisfied with the present position we should welcome their sending a representative of their own to Johannesburg.

Mining Leases Bill.

I would refer you for a few moments to the Draft Transvaal Mining Leases Bill. I understand that the Government is holding a session early next year, and I trust it intends to proceed with that measure in that session. It might be thought that this suggested policy of expansion is inconsistent with what I have said in the earlier portion of my speech, namely, that in view of the stringency of labour and supplies existing mines are placed in a position of great difficulty. The requirements, however, for initial shaft sinking operations in labour and supplies are comparatively slight, and unfortunately there is more than a possibility that certain of the lower grade mines, owing to the shortage of native labour, and the increasing difficulty of obtaining supplies, should they close down, may be unable to reopen and again carry on mining. If that be so, and I fear that in certain instances that may be the case, it is very desirable that no time should be lost in the development of new areas to take the place of those that have dropped out. And then, as you all know, the Government calls for tenders for areas when, in its opinion, money is sufficiently plentiful for the attraction of capital, and in consequence therefore the Government is likely to call for tenders for ground irrespective of the practical difficulties affecting supplies. In these circumstances the Chamber, as representing the mining industry, is definitely of opinion that the amendments contained in this draft Bill should be proceeded with. In its opinion the present procedure limits

the competition for these areas. Section 46 of the Previous and Base Metals Act contains a very general paragraph to the effect that any tenderer must provide the capital required for the entire equipment of the mine, and all further racing capital necessary for the development of such mine within a specified time, and the effect of this provision is largely to exclude from participating in these areas the smaller financial groups or individuals. There are other provisions also which I need not refer to particularly as they are in the nature of machinery provisions, but the proposed Bill provides a procedure far in advance of that at present in existence. I do urge, therefore, that it should be proceeded with.

Mr. Douglas Christopherson, local manager of the Consolidated Gold-fields of South Africa, said he took it it was agreed that the gold output was essential to the Empire. If that were not so, he did not suppose that many of them would be sitting here. It was also agreed that the output was essential to the Union of South Africa. He would like, following on what the president had said, to put the position in regard to certain low grade mines. In October there were 11 mines making a working profit of 1s. 6d. per ton or less. These 11 mines spent in the Union over £4,000,000 annually, and the total number of white men employed by them was over 5,000. If these mines were closed down it affected the first essential, the output of gold, because it must take some years before the Far East Rand would make up the gold lost. And then take the Union point of view. The revenue would suffer through the loss of indirect taxation, railage dock dues, licences, etc. The revenue would suffer as a large proportion of the £4,000,000 was spent by the receivers in the country, who again contribute through indirect sources to the revenue of the country. Take, again, what was going to be the position to the Reef towns if these mines closed down. Johannesburg must suffer to some extent, but the Reef towns would suffer to a considerable extent. Commerce and business in some of the Reef towns would be crippled, and he believed there were certain of these towns whose very existence would be at stake. If these mines closed down, over 5,000 men would be out of employment. It would be impossible for the Far East Rand to absorb them all for some years to come. They had to remember that a fair number of these men were on temporary engagement, taking the places of men who were at the front. These men would return, and the position would become more acute. They had promised them their occupation when they returned.

The Rosy Side.

On the other hand, if the low grade mines could be kept alive, it was no stretch of imagination to realise what the prosperity of the industry would be after the war. With all the present mines working and with the Far East Rand fast extending operations, they would have such a state of prosperity on these fields as they never had before and which would be reflected throughout the whole of South Africa, and just at the time when the country would be endeavour to recuperate from the ill-effects of the war. Therefore he thought they should ask the Government to seriously consider the position of these mines and see whether they could in any way assist them. It was not his intention to suggest

any way at present, because he thought it was a matter for the Government, and he would suggest the president and executive should discuss the matter. He thought the industry might do something more than it had done in the past. He knew it was a debatable point and one which would not go down with a certain section of the public. He considered there were mines where the development was so far ahead of the mines that they could practically close down development for at least a year. There was the further question of certain mines increasing their crushing capacity, whether or not it would be better for the community and for the industry that these mines should go straight ahead or postpone expansion for six months, or even a year, and thus reduce the great demand on shipping space. The question of shipping was one of the biggest problems to-day. Several of the low grade mines could even pay more for stores, provided they could obtain appliances which would save labour. If they could lessen the demand on shipping for large machinery and get permission to import certain classes of labour-saving machinery it would be of great assistance.

Experiment with Jack Hammers.

In order to emphasise what he was driving at, he would like to give some figures as to what a certain mine has done by the use of jack hammers. He did not claim this was the only mine because the mines of other groups had been working on it and had met with equal success. This was the report he had from the manager of one of the mines of the Gold-fields group:—

"With 2 $\frac{3}{4}$ in. reciprocating machines, 981 cases of explosives were used to break 2,214 fathoms. If jack hammers had been used, the mine estimates the same fathomage would have been broken with 407 cases of explosives, or a saving of over 37 per cent. of the total explosives used in breaking rock in October. During October 3,388 fathoms were broken, and the total number of boys employed on breaking ground was 837, including those on jack hammers. At the rate the jack hammers were breaking ground, 242 boys would have broken the above fathomage, thus saving the labour of 595 boys. This particular mine is expected to obtain a tonnage of 60,000 tons per month. In order to obtain that, 3,865 fathoms must be mined. With jack hammers this could be done with 278 boys, whilst past records show that to break this tonnage 1,300 boys would be required."

These figures emphasised the necessity of an endeavour being made to import mining requisites which would help them as regarded labour, but more especially as regarded the glycerine position. If it was essential to the Empire and essential to the Union of South Africa that the industry should be maintained at full speed, then such figures as he had quoted would appeal to the Imperial and Union Governments.

Mining Leases Bill.

Mr. Dale Lace said they were aware that the Government during the last session gave a definite written pledge that the Mining Leases Bill would be proceeded with at the ensuing session of Parliament. That Bill was of the most vital importance, not only to the Far East Rand, but to the whole of the Witwatersrand. It was rumoured that the Government intended to bring in, not the Mining Leases Bill which was approved by the Select Committee of the House,

but another Bill. If so, they were entitled to know at once what the terms and contents of that new Bill were. It was obvious that a new Bill might contain conditions of a controversial character which had not previously been discussed or considered by members. That might and probably would result in the new Bill being referred to a new Select Committee, and so they would have the old weary delays once more. He would also refer to the recent arbitrary action of the Minister of Mines in altering the conditions of tender under which the western section of de Rietfontein was now offered for public competition. He would not dwell upon the injustice the alteration did to adjacent owners—that was obvious. But he would point out the inconvenience and embarrassment caused to tenderers by such chopping and changing of conditions, more particularly at such a time as these, when communication with distant financial centres was so difficult and rapidly becoming more so.

Railway Rates on Coal.

Continuing, Mr. Lace said the desire to develop industries and improve the conditions of the population by means of cheap transport were specially emphasised in the Act of Union. He regretted to say that the Administration of the Railways and Harbours had not only not carried out the principle of the Act, but had acted in a manner which was diametrically opposed to it. He need not speak of the importance to the country of the coal trade. Without coal, they could do nothing. It was the great basis of industries, and from the coal traffic was derived a huge proportion of the Railways and Harbours' revenues. Great efforts had been made, and were still being made, by the coal producers to open up an export trade to markets oversea, and to establish and augment a bunker trade at the ports of South Africa, whose geographical position was so favourable for such a trade. So far from giving support and assistance, the actions of the Railways and Harbours had been in precisely the opposite direction.

The original rate to Delagoa Bay for bunker coal of 6s. 1 $\frac{1}{4}$ d. was in operation up to 5th July, 1916, when the rate was increased to 12s. 1d. per ton. A further increase of 4s. per ton was now notified to take effect as from 6th December, 1917, making the rate to Delagoa Bay 16s. 1d. per ton, or 18s. long ton. The rate to Capetown as from 1st October, 1913, was 14s. per ton, less a rebate of 1s. per ton. The rate was increased by 6s. per ton on 5th July, 1916, and the rebate withdrawn. A further increase of 4s. per ton was now notified to take effect as from the 6th December, 1917, making the total rate 24s. per ton as against 13s. per short ton formerly, or 26s. 8d. per long ton. When the bunker rate was 6s. 1d. per ton a rebate of 1s. per ton was allowed. This rebate was withdrawn when the bunker rate was increased on 5th July, 1916. He might state that in respect of the last increase of the railage rate of 4s. per ton, 48 hours' notice of the new imposition was given. The notice was dated the 3rd instant, it was received on the morning of the 4th, and came into operation on the morning of the 6th instant. He feared that to a large extent the public were to blame. They had allowed a body of officials to obtain almost autocratic power, and to establish a sort of imperium in imperio in their midst. The whole position was a wrong one. The power given to the Railways and Harbours Administration were unique. They had good coal, cheap coal—the cheapest for its quality in the world. The coal was always wanted, and never more so than to-day. As they knew, the coal-owners had not increased the pit-head

price of their product beyond infinitesimal figures—which had been forced upon them by increased costs of wages and supplies.

Comparison with English Prices.

Just to let them see the practical effect of the railway rates, he would give a concrete case. Suppose that the pit-head price of coal was 6s. The railway rate to Capetown was now 24s. per short ton or 26s. 8d. per long ton. That was 32s. 8d. per long ton, exclusive of loading charges. The following were the latest advices of English prices—for a better article than South Africa could supply—free on board at the ports named: Glasgow 27s. 6d., Leith 26s. 6d., Northumberland 30s., Monmouth (best Admiralty) 30s. The fallacy which underlaid the Railways contention that the consumer paid was nonsense. If the railway tariffs killed the trade, there would be no consumer. It was beyond doubt that the production of the coal mines would be affected by the Railway action, and that, too, at a time when the collieries had to face the probable closing down of many gold mines by reason of reduction of output and reduced earning powers. That made the outlook for the country more serious still. He felt that an earnest appeal should go forth from this Chamber, as representing all mining interests, to the Government in office, to see that the Railway Administration retraced their steps, and refrain from their arbitrary measures; to give the gold industry and the coal industry fair treatment and fair dealing; to show some respect for the representations of those who have built up those great industries, and were endeavouring to make them greater still, and who by their efforts have rendered it possible for the country to be provided with a great system of railways and excellent harbours. Mr. Lace concluded by referring to the increased local cost of certain articles, which he held were not justified. He said the Government should fix the price of everything. He would like to see martial law enforced, and at least they should see if they could not stop profiteering in small supplies.

The President's Reply.

The president, Mr. Wallers, in reply to the discussion, said he had in his speech expressed the attitude of the Chamber on the Far East Rand Mining Lease Bill, and that was the necessity of impressing upon the Union Government the desirability, and, indeed, the urgency, of proceeding with that Bill in the next session. That would be done. As to the new method of inviting tenders for areas on the Far East Rand, that was a matter the Executive had discussed, and they had come to the conclusion—and he thought rightly—the method chosen by the Government as regards amalgamation with adjoining areas was one in regard to which the Chamber could not very well put forward representations. It was more a personal matter. The Chamber was interested in the expansion of the industry as a whole, and there might be conflicting interests in regard to the offers for the Far East Rand areas. As regards the railway rates on coal, it was mentioned in the report of the executive committee that the collieries of the Transvaal had not hitherto been affiliated, and had now become affiliated, and were forming a committee of their own, and would be able to put forward their views with a better chance of success. With regard to the question of profiteering, he did not think Mr. Lace was right. In fact, he had reason to know he was not right. The Chamber had investigated with the utmost care the prices that were charged for the essentials of the mining industry. There were indications that these prices were excessive, and

they went into each individual case with the merchants, and they found all the reputable merchants were not profiteering, and were charging a reasonable rate for their goods, bearing in mind the enormous increases in freight, insurances and other charges. There had been cases where implements—shovels were one of them—had been cornered to some extent. They had passed from one to another, and in each case a handsome profit had been made, and when the mines came to buy them finally the charges were excessive. These cases were very few indeed. With regard to the low grade mines, he had taken up the question with the Ministers of the Government, and had put forward with as much emphasis as he could the views Mr. Christopherson had expressed. If they were able to bear out in actual practice the figures Mr. Christopherson had quoted in regard to jack hammers, they would have to see, in the first instance, to manufacture and afterwards to the shipping of them. When they determined these questions, they would make representations in the right quarter.

Mr. Lace said he took it that in the case of conflicting interests the Chamber represented the views of the majority of its members. He agreed there were a lot of reputable storekeepers, but there were a lot of disreputable ones as well, and these were the people they wanted to get at, and he thought something should be done by the Chamber in that direction.

The motion for the adoption of the report of the executive was then put and carried.

ZAAIPLAATS TINS.

Speaking at the annual meeting of the Zaaiplaats Tin Mining Co., Ltd., on December 10 at Pretoria, Sir T. K. Murray, the chairman, said: When we met last year to consider the reports and accounts, I had to express regret for the poor results then submitted to you, and I am sorry to say that the results for the year under review show an even smaller working profit, the respective figures being £5,500 for the previous year and £1,500 for the year ended 31st of July, 1917. From the directors' report you will have seen that during the first five months of the year a loss of £3,800 was incurred, and you will recollect that owing to these poor results the mine was temporarily closed down last December. The suspension of operations only lasted about ten days, and since January steady profits have been made with the exception of the month of February, when another bad patch was struck in the mine. From July onwards the profits have increased very much, averaging about £2,000 per month. The working costs have increased by 2s. 4d. per ton treated. This is almost entirely due to the abnormal conditions brought about by the war. The quantity of concentrates produced shows a considerable falling off as compared with the previous year, being as much as 176 tons less notwithstanding the fact that the tonnage mined during the year is only 3,000 tons less than the quantity mined during the previous year, while there is practically no difference in the tonnage milled. It will, therefore, be seen that the reduction in the profit for the year is almost entirely due to the reduced output obtained from your mine, owing to the lower grade of ore mined. I can assure you, gentlemen, that it required a great amount of optimism and courage, particularly on the part of your manager,

to pilot the affairs of the company safely through the bad times we encountered during the first part of the year under review. I do not wish to labour this matter any further, beyond adding that the policy of the directors in continuing to push forward and extend development and prospecting work has been fully justified by the better results which are now being obtained.

The Year's Working.

Turning to the balance sheet, he pointed out the financial position of the company showed an excess of cash and cash assets over liabilities of £13,569. Of this sum, £6,500 was tied up in the form of stores, live stock, sundry debtors, etc., and could not, therefore, be regarded available cash. This left a balance of £7,000 in hand at 31st July last, which, he thought, should be retained for the purpose of again placing the company in a sound financial position. Dealing with Dr. Corstorphine's prolonged study of the mine, this confirmed the manager's views with regard to further exploration, and recommended that boring operations should be carried out on the "Zaaiplaats Lease" area, in order to explore the granite beneath the pegmatite. These operations were started in August last, and so far 1,000 feet of drilling had been done without success. On the recommendation of the consulting engineer, it was decided to utilise the opportunity, while the drilling machine was available, of boring on other parts of the property, and this work is at present in operation. A most important piece of development was also undertaken soon after the end of the financial year. A connecting drive between No. 6 and No. 13 sections was taken in hand. This, when completed, would cut out the excessive stage hoisting which has been necessary in order to bring the ore from No. 13 section to the surface. Besides the saving in costs, there will be a substantial gain in efficiency owing to the close connection of the main working places. The work was now well forward and the scheme should be completed within a few months.

Changes in Personnel.

Shortage of labour had interfered with operations during a portion of the year under review, and they again were entering the annual season of shortage. In former years it was always found possible to take measures to retain a sufficient labour supply for essential work, but owing to recruiting for the Oversea Native Labour contingent, operations would be more severely hampered during this ploughing and planting season.

When Dr. Corstorphine had completed his examination previously referred to the directors took into consideration the advisability of appointing a permanent consulting engineer, and as a result Mr. W. J. Gau was appointed to this position from the 1st June last. Six employees of the company had been on active service during the year. Of these, two are still at the front, and one has been wounded. The chairman referred sympathetically to the deaths of two directors, Mr. D. M. Munro and Mr. Yendall, and added: Your board appointed two directors during the year, namely, Messrs. J. Munro and F. W. Baxter, and you will be asked to confirm the action of the Board in so doing.

Two Important Matters.

Before concluding, said the chairman, there are two very important matters with which I have to deal. The first and foremost is the adoption of the policy of converting the concentrates produced into metal for disposal locally, instead of shipping the concentrates overseas, as has been the practice in the past. Experimental work has shown that good marketable metal could be produced, and when, following on the increased realisation charges, shipping facilities were restricted, it was decided to commence smelting operations on a commercial scale. An adequate smelting plant has been erected, and I am sure that the company is to be very heartily congratulated upon having successfully launched a new industry. It has always been held by high technical authorities that the smelting of tin in this country was impracticable, owing to the fact that we did not produce the various grades of ore essential in the blending of a suitable product for smelting. All I can say, gentlemen, is that in spite of these high technical opinions, the Zaaiplaats Tin Mining Company is to-day producing metallic tin of high quality which is said to be even more suitable for local requirements than the imported article. With regard to the disposal of this tin, your directors have been fortunate enough to secure contracts for the purchase of the whole of its monthly outputs, and it is no secret to-day that the South African Railways are being supplied with all their requirements by your company.

The next important matter is in connection with an option which the company has secured over ground owned by the Transvaal Consolidated Land and Exploration Company, Ltd., adjoining your company's property, and which is said to contain a large quantity of rich alluvial tin. The option is for a period of three months to enable us to prove the value of the ground. Prospecting operations have just been commenced."

Condition of the Mine.

"It may interest shareholders to know that the present condition of the mine is quite satisfactory. No. 13 section is looking particularly well, and the main face, which is now 15 feet by 10 feet in size, is carrying good values. Development in the "Zaaiplaats Lease" area is encouraging, though nothing of great importance has been discovered. Work has been temporarily suspended in Nos. 5 and 6 sections owing to the shortage of labour. An interesting feature of recent development work is the passing of both Nos. 6 and 13 sections into the "lease" area.

I would like to add the board's appreciation of the good services rendered to the company during the year by the mine and head office staffs. Particularly do I wish to refer to the valuable services rendered by the manager, to whose credit is due the successful smelting of tin on the mine."

The chairman moved the adoption of the report, and Mr. Klagsbrun seconded. This was carried. Mr. M. Solomon was re-elected a director. Mr. J. Dougall was re-elected auditor for the year.

Those present included Messrs. J. Munro, M. Solomon, F. W. Baxter, J. Macintosh, F. K. Murray, A. Lindsay, R. H. Morley, J. H. G. Wagner and S. A. Klagsbrun. Shares totalling 110,123 were represented.

SOUTHERN VAN RYN REEF.

The annual meeting of the Southern Van Ryn Reef G.M. Co. was held at Exploration Buildings on December 6. Mr. W. Kidger Tucker presiding. Optimistic reports from the directors and manager were submitted and the report and accounts were adopted without discussion.

In the directors' report it was pointed out that during the year prospecting operations consisting of boring and shaft-sinking with an object of locating the Nigel and Van Ryn Reefs and their sub-outcrop have been steadily prosecuted with results sufficiently satisfactory to warrant the company in entering on the first stages of mining development. With that object in view, Mr. C. J. Tutt, who has a large experience in the Springs and other mines in the Far East Rand, has been appointed manager.

In moving the adoption of the report and accounts, the Chairman said one felt very much encouraged at the advance they had made during the last 12 months. They had started operations in drilling at the time, but since then they had located the sub-outcrop, as they called it of the Nigel Reef, and they were now fairly well on the track of the sub-outcrop of the Van Ryn Reef. They had found that the reef dipped at a very steep angle, which was a tremendous advantage to them in working and development was now taking place.

The speaker went on to refer to the accounts and pointed out that should the full number of shares of the authorised capital of the company be taken up the position would be they would have about £21,000, which should be sufficient for their requirements. With regard to expenditure it would be seen that an amount of over £10,000 had been paid over to the Government in claim licences, so that the Government had done pretty well out of the company up to the present.

In seconding the motion, Mr. Bleloch paid a tribute to Mr. Frames, their consulting geologist.

Speaking of the position of the company, Mr. Bleloch said that while Central Rand shares had been depreciating in value almost daily the

shares in the companies of the Far East Rand had been increasing. The Main Reef series was impoverished in depth, and it would have created a very serious position for this country had not the Van Ryn Reef been opened. They had the greatest assurances for permanent payability in the Van Ryn Reef.

The speaker went on to speak of the uphill fight the company had had at the outset and said they had now successfully weathered the storm. In the way of support he could not say they owed much to Johannesburg. Here we seemed to be absolutely under the shadow of the influence of German finance. Such a state of things was wrong and instead of a company like theirs which had set out on a pioneer enterprise being regarded in the light of a benefactor they had been looked at askance on account of this powerful German influence.

Mr. W. Anstey congratulated Mr. Bleloch upon his perseverance and the better prospects of the company, but said he did not think that German finance affected the position.

NEW AREACHAP COPPER MINES.

The second annual meeting of shareholders of the New Areachap Copper Mines, Ltd., was held at Exploration Buildings, Johannesburg on December 7, Mr. Niels Langkilde presiding.

The chairman, in moving the adoption of the directors' report and accounts, said that during the first part of the financial year the development through the old north shaft of the great body of iron pyrites found in the mine was carried on. It was hoped that the explosive companies would have taken advantage of this great ore body and entered into proper contracts for securing adequate and permanent supplies of pyrites for manufacture of sulphuric acid produced in this country itself, with none of the difficulties and dangers inseparable from dependence on oversea supplies. In order to carry out such contracts, it would be necessary to construct a railway siding of ten miles at a cost of

about £20,000, and the board had tried to obtain assistance from the explosive companies in getting the necessary funds for this purpose, and for the proper development of the mine, but although they had plenty of promises, nothing further came of it; and as the company's funds were getting so exhausted that it was necessary for three of the directors to guarantee an overdraft in the Standard Bank of £3,000, it was decided to discontinue this work. The result of the work done was that approximately 6,000 tons of iron pyrites were mined, of which 938 of lump pyrites were picked and sold. A three-compartment main hauling shaft was started and sunk and timbered to a depth of 200 feet, and about 30,000 tons of iron pyrites had been developed through the old northern shaft, which is 295 feet deep. The high price of copper has directed the board's attention to the deposits of copper ore on the surface; 1,419 tons of copper ore were mined and sent to the Falcon Mines, Rhodesia, and to Messina. This ore averaged about 15 per cent. and when realised would put the company in a position of being out of debt and having a surplus of about £3,000. Negotiations were proceeding with a view of raising sufficient capital for developing the mine properly and for constructing the railway siding. The mine contained enormous quantities of iron pyrites rich in sulphur, and probably also great quantities of payable copper ore, and it was hoped that sufficient money would be raised so that work could be restarted on a proper scale in the near future. The difficulties and expense in obtaining sulphur from oversea were getting greater every day, and it seemed impossible that this great deposit should be allowed to lie idle much longer. It was not only the explosive works who wanted sulphuric acid—numerous manure and other chemical industries were dependent on this product, and sulphur would, from all accounts, in future play a very important part in agriculture as a fertiliser. The property was a valuable one both as regards sulphur and copper, and there was every reason to expect that money would soon be forthcoming for the proper working thereof.

The report was adopted, and the retiring directors, Messrs. Niels Langkilde and F. B. Rivas, were re-elected.

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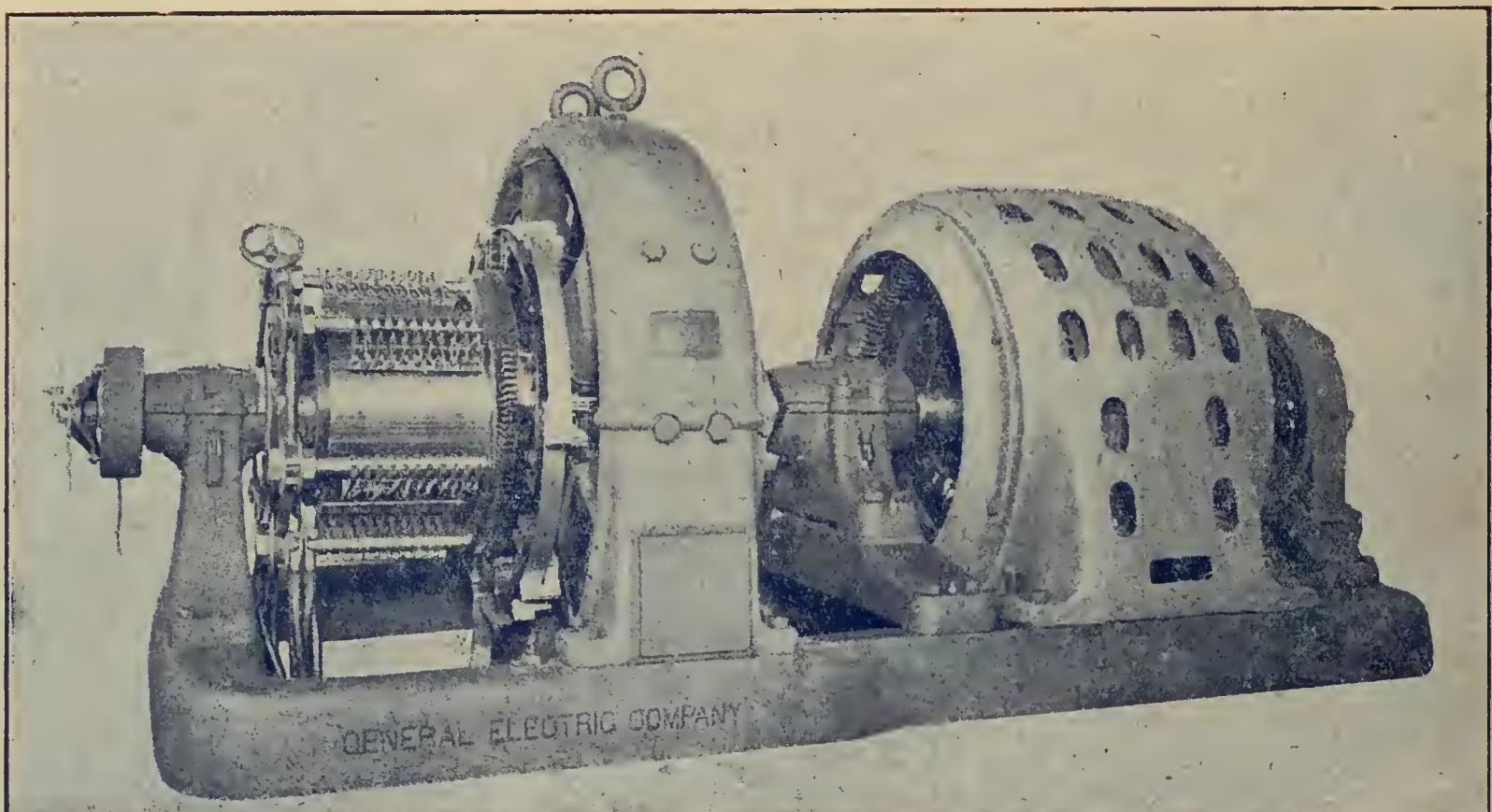
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